

ALL FORM THREE EXAMS

Prepared and compiled by ENOM SOFTCOPY PUBLISHERS & Mr.Mosomi

WhatsApp/Call/sms Mr.Mosomi @[0748842695](https://api.whatsapp.com/send?phone=0748842695) for Marking schemes of all form one exams.

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By Mr_Mosomi_resources

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*Wh
marking schemes*

Name: Adm no Class.....

443/1
AGRICULTURE FORM THREE PP1
END OF TERM ONE
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

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

SECTION A (30 marks)

1. Mention **four** factors that determine the depth of planting in crop production.

(2mks)

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2. State **four** benefits of a good soil structure.

(2mks)

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3. State **four** factors to be considered in sitting nursery bed.

(2mks)

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4. Give **four** advantages of shifting cultivation. (2mks)

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5. Name **four** factors influencing soil formation. (2mks)

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6. Define the term **drainage**. (1mk)

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7. Give any **three** tertiary operations carried out during land preparation. (1

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½mks)

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8. State **three** forms in which soil water exists. (1

½ mks)

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9. In farming under what conditions is opportunity cost zero.

(1mk)

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10. What are the deficiency symptoms of sulphur? (1½ mks)

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11. Name the vegetative materials used in the establishment of the following crops.

Bananas(½ mk)

Pineapples.....(½ mk)

Sisal (½ mk)

12. State **four** advantages for planting potatoes in a ridged seedbed.
(2mks)

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13. State **four** reasons for pruning. (2mks)

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14. What is organic farming? (1mk)

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15. Give reasons for carrying each of the following practices in tomatoes nursery. (2mks)

i) Pricking out

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ii) Hardening off

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iii) State two problems that may be brought by a hard pan. (1mk)

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15. Give **four** advantages of tissue culture. (2 marks)

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16. State **four** properties of soil influenced by its texture.
(2 marks)

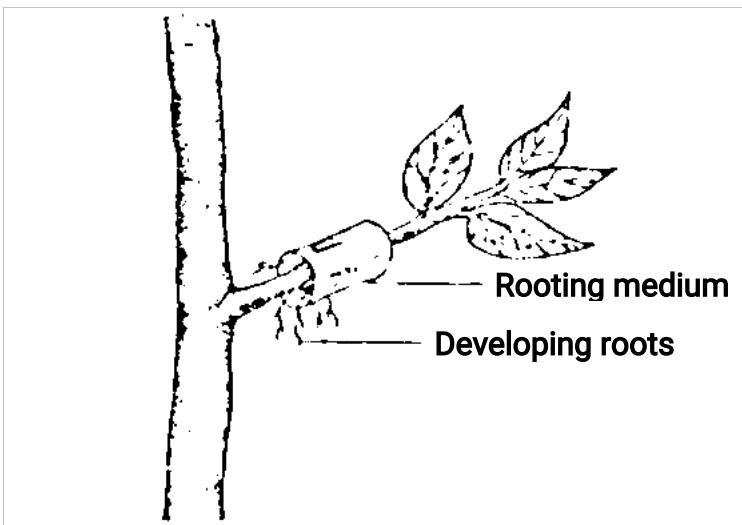
(2)

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SECTION B (20 MARKS)

Answer ALL questions from this section in the spaces provided.

17. The diagram below shows a method of layering. Study it and answer the questions that follow.



a) Identify the method of layering illustrated above.

(1mk)

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b) State **one** circumstance in which the method of layering indicated above is recommended.

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(1 mk)

c) Maize requires 120kg/ha of phosphorus pentoxide (P_2O_5). How much of the compound fertilizer 20:20:10 would be applied to 0.4 hectare of land to achieve this rate. (show your working).

(2

marks)

d) Distinguish between straight fertilizers and compound fertilizers.

(2

marks)

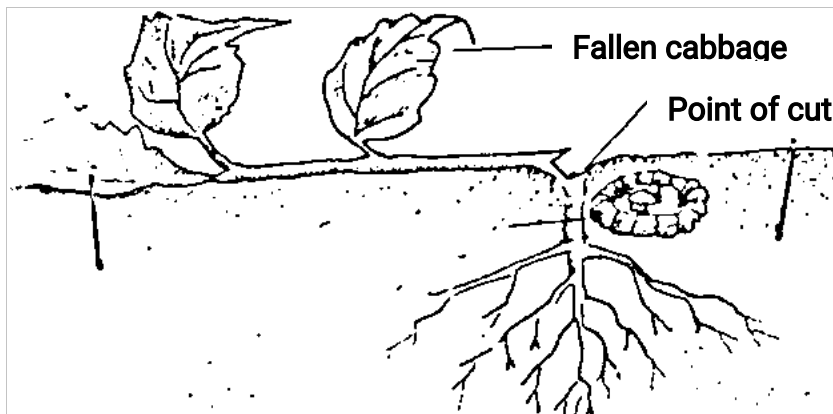
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18. The diagram below shows a cabbage seedling which has been attacked by a certain pest.



a) Identify the pest(1 mark)

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b) State **three** methods of controlling the above pest (3 marks)

(3 marks)

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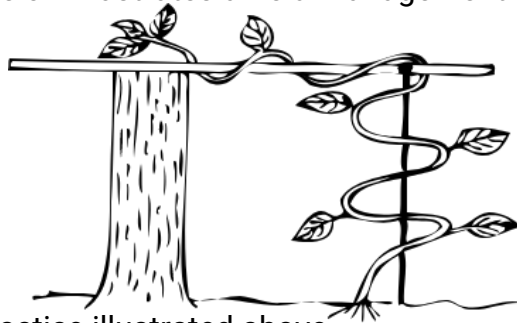
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.....State **four** methods of harvesting water on the farm. (4marks)

19. The diagram below illustrates a field management practice carried out to a fruit crop



(a) i) Identify the practice illustrated above.

(1mark)

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ii) Give **three** reasons for carrying out the practice illustrated in the above diagram. (3marks)

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(b) Give a reason why it is not advisable to use manure in carrot production.

(1mark)

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SECTION C (40 MARKS)

Answer **only two** questions in this section in the spaces provided.

20. a) Describe the methods used in preparing materials in readiness for planting. (8 marks)

b) Explain the factors that may determine spacing of crop in the farm (8 marks)

c) Explain briefly the factors that influence timely planting. (4marks)

21 a) State and explain the uses of farm records to a farmer (10mks)

b) Explain how the following land reforms are carried out

i) Land consolidation (5mks)

ii) Land adjudication and registration (5mks)

22. a) Describe the environmental conditions that may lead to low crop yield (5mks)

b) Explain the factors of cultural methods of soil and water conservation (10mks)

c) Give FIVE advantages of overhead irrigation (5mks)

23. a) Explain the factors of cultural methods of soil and water conservation (15mks)

b) Give FIVE advantages of overhead irrigation (5mks)

Name: Adm no Class.....

443/2
AGRICULTURE FORM THREE PP2
END OF TERM ONE
TIME: 2 HOURS
INSTRUCTIONS TO CANDIDATES:

2. Answer **ALL** the questions

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SECTION A (30MARKS)

d) Name **three** types of dairy goats reared in Kenya

(1 ½)

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.....

e) a). What is raddling in sheep management

(1mk)

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b. Give **two** reasons for raddling in sheep management

(1mk)

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f) Give **three** advantages of contemporary comparison method in selection of livestock (1¹/₂)

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g) Give **two** reasons for spreading a polythene paper (pvc) on the slab of a permanent farm building

(2mks)

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...

h) Name three types of Fresh warm water fish reared in Kenya

(1

½ mks)

1

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i) a) Give **three** disadvantages of inbreeding in cattle production

(1¹/₂mks)

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b). Give **three** advantages of embryo transplant in cattle

(1¹/₂mks)

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j) Name the farm tools used for each of the following operations listed below.

a) Tightening barbed wire during fencing.....(1/2

mark)

b) Smoothing of concrete floors.....(1/2 mark)

c) Giving liquid drugs to livestock through the mouth(1/2

mark)

d) Sharpening the teeth of across-cut saw.....(1/2 mark)

k) List **four** factors considered when making a choice of building materials. (2

marks)

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l) State **two** reasons why calves should be housed singly . (1 mark)

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m) What is cropping in fish farming? (½ mark)

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11. State **three** methods of disbudding young calves. (1½marks)

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12. State **two** reasons why calves should be housed singly . (1 mark)

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13. Name **one** intermediate hosts for each of the following.

a) Tapeworm(*Taenia spp*).....(½ mark)

b) Liver fluke(*Fasciola spp*).....(½ mark)

14. Name **four** disease predisposing factors outside an animal's body. (2 marks)

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15. State **four** factors that determine the amount of water a beef animal can take . (2 marks)

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16. State **four** structural requirements of a zero grazing unit. (2 marks)

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17. a) Name the tool used for shearing wool sheep.(½ marks)

b) State **three** practices carried out during tugging season in sheep management. (1½ marks)

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18. State **three** functions of carbohydrates in livestock nutrition. (1½ marks)

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SECTION B 20 MARKS

19. Below are illustrations of farm tools and equipment.



A

B



2) Identify the tool labelled A and C

A

(1 mark)

.....
B

(1 mark)

3) State the advantage of tool B over tool C

(1 mark)

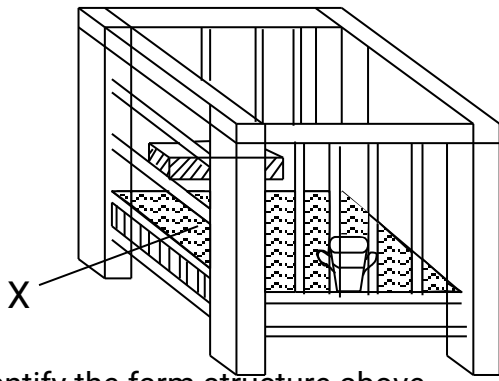
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4) State two maintenance practices carried out on tool labelled B. (2 marks)

(2 marks)

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.....

20. Below is a farm structure. Study it carefully and answer the questions that follow.



a) Identify the farm structure above(1 mark)

b) State the requirement of the part labelled X

(1 mark)

.....
.....

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c) State **three** maintenance practices that should be carried on the structure. (3 marks)

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21. A dairy farmer prepared 1000kg of feed (20%DCP) from the following feedstuffs:

Oats – 10% DCP , Simsim seedcake 60% DCP

Calculate the amount of each feedstuff used using Pearson’s square method.

(3marks)

21. Classify the following feedstuffs as either roughage or concentrate.

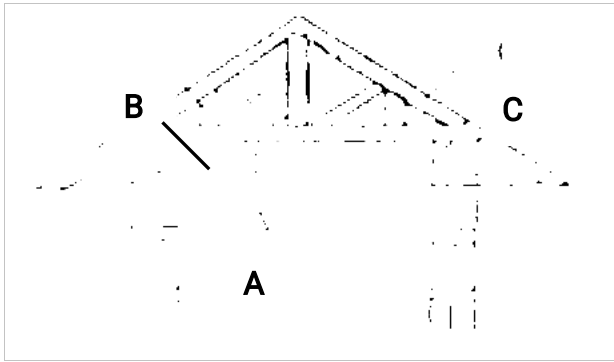
(2marks)

i) Bone meal _____

ii) Silage _____

22. Study the diagram below of a farm structure and answer the questions that follow.

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c) Identify the parts labelled A, B, and C.
 marks)

(3

A _____
 B _____
 C _____

d) Name **two** chemical preservatives that can be used to treat the wooden part of the above structure against fungi and insect attack.

(2marks)

.....

SECTION C 40 MARKS

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

23. [a] Describe six signs of farrowing in a sow .
 [6mks.]

[b] Explain six benefits of the Kenya top bar hive .
 [6mks.]

[c] Explain eight factors considered when siting farm structures .
 [8mks.]

24. a) State and explain 5 reasons for keeping livestock.

(10

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marks)

b) Describe factors considered when selecting a gilt for breeding. (6

marks)

c) Name four systems of breeding used to improve livestock. (4

marks)

25. a) Describe ten general methods of disease control in livestock.
(10marks)

b) Describe the advantages of fences. (10

marks)

Name :.....Class;.....Adm No:.....

END OF TERM EXAM

BIOLOGY – FORM THREE

PAPER 3 (231/3)

(CONFIDENTIAL)

TIME 1 HOUR 45 MINUTES

TERM 1 – 2020

IRISH POTATO (A PIECE PER STUDENT)

RULER

SCAPEL

LABELS (A AND B)

IODINE SOLUTION

BENEDICTS SOLUTION

SODIUM HYDROXIDE SOLUTION

COPPER II SULPAHATE SOLUTION

TEST TUBES (5 PER STUDENTS)

MEANS OF HEATING

HYDROGEN PEROXIDE 20ML PER STUDENT

MORTAR AND PESTLE

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231/1

BIOLOGY FORM THREE PP1

END OF TERM ONE

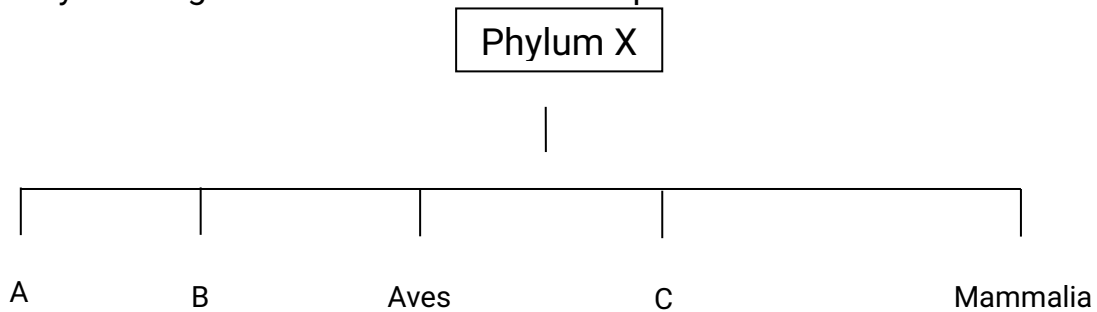
MARCH/APRIL 2020

TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES:

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

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



4. What is the phylum X?
.....(1mk)

5. Name the classes A, B and C.
(3mks)

A.....
....

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B.....

.....

C.....

.....

6. State **two** distinguishing characteristics of mammalian class.
(2mks)

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23.Name the field of science that specializes in the study of members that belong to the class insect.

.....(

1mk)

24.What are the functions of bile salts during the process of digestion?
(2mks)

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.....

25.State the importance of each of the following to the life of organisms.

1

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- Respiration.....
(1mk)
- Excretion.....(1mk)

26.What are the differences between blood in the pulmonary artery and that in the pulmonary vein?

..... (2mks)

27.Name **three** plant tissues that are involved in support.

(3mks)

.....

28.State the causative agent and method of transmission of cholera.

(2mks)

Causative agent.....

Mode of transmission

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29.Name the products of light stage in photosynthesis.

(3mks)

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30.What causes the following diseases?

a) Diabetes mellitus.(1mk)

b) Diabetes insipidus.....(1mk)

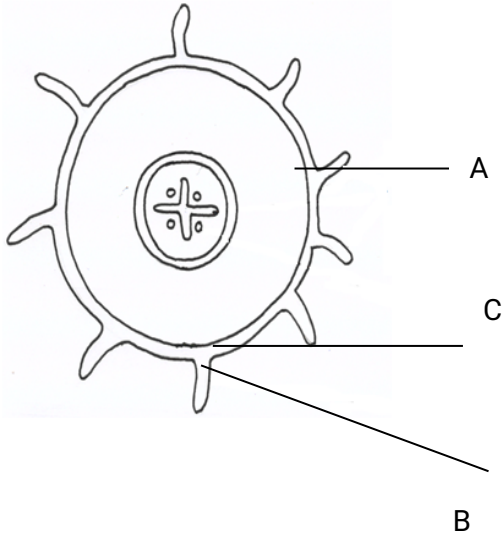
31.Name **two** benefits that a parasite derives from the host.

(2mks)

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32. The diagram below represents a cross section of a plant.



e) From which part of the plant was it obtained?

(1mk)

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.....

f) Name the parts labeled A and B.

(2mks)

A.....

B.....

g) State the function of part C.

(1mk)

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33.(a) What is the role of fungi in an ecosystem?

(1mk)

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(b) State four characteristics of fungi.

(4mks)

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34.State the function of the following parts of a light microscope.

(2mks)

22.Objective lens.....

23.Diaphragm.....

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35.State **four** ways of controlling *schistomiasis*.
(4mks)

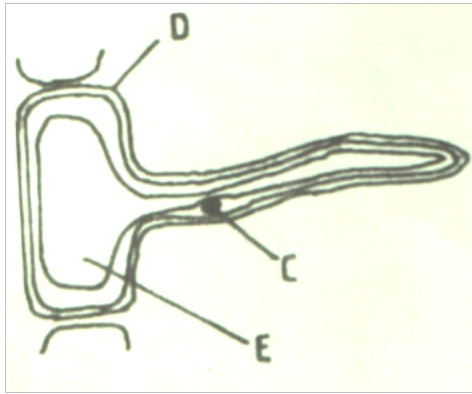
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36.Distinguish between predation of and parasitism. (4mks)

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37.The diagram below shows a specified plant cell.

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1) Name the cell.

.....(1mk)

2) Name the parts labeled A, B, D and E. (4mks)

A.....

R

24.State the function of the part labeled C.

(1mk)

.....

38.State **three** factors that affect the rate of diffusion.

(3mks)

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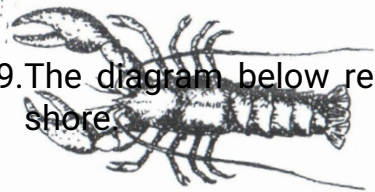
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39.The diagram below represents a certain organism collected by a student at the sea shore.

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d) Name the class to which the organism belongs.

(1mk)

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e) Give **three** reasons for your answer in (a) above.

(3mks)

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40.(a) Name the causative agents of the following diseases in humans.

(2mks)

c) Typhoid.....

d) Amoebic dysentery.....

(b) Name the disease in human caused by *Plasmodium falciparum*.

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(1mk)

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41. The diagram below represents a certain plant.



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

.....

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

42. Describe the **three** characteristics of a population. (3mks)

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43. Other than using the quadrant, give two methods of estimating population of grass. (2mks)

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44. Name **three** processes that are responsible for loss of energy from one trophic level to the next.

.....(3mks)
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.....

45. State **two** ways in which aerenchyma tissues in aquatic plants are adapted to their function

..... (2mks)
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46. What is meant by the following terms?

n) Habitat: (1mk)

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.....

o) Ecosystem. (1mk)

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p) Ecology. (1mk)

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47. *Ascaris lumbricoides* is an example of an endo-parasite.

iii) The name *Ascaris* refers to: -..... (1mk)

iv) State the habitat of the organism.....(1mk)

v) State **three** ways in which the organism is adapted to living in its habitat.
(3mks)

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48.(a) Name the process through which free atmospheric nitrogen is converted into nitrates. (1mk)

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(b) Name the bacteria found in the root nodules of leguminous plants.
(1mk)

Name: Adm no Class.....

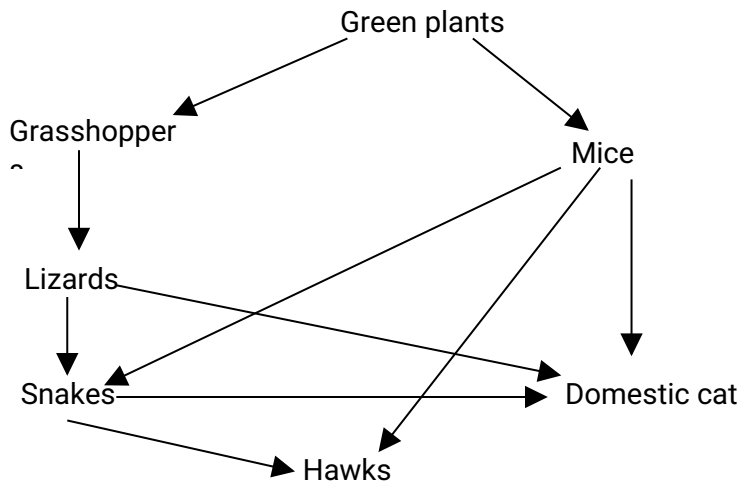
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INSTRUCTIONS TO CANDIDATES:

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

SECTION A: (40 MARKS)

5) The chart below represents a food web. Use it to answer the questions that follow.



h) Construct two food chains ending with tertiary consumer in each case. (2mks)

i.

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ii.

i) Which organism has the largest variety of predators in the food web?

(1mk)

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.....
.....

j) Name secondary consumers in the food web.

(1mk)

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k) Suggest three ways in which the ecosystem would be affected if there was a prolonged drought.

(3mks)

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6) To estimate the population size of crabs in a certain lagoon, traps were laid at random 400 crabs were caught, marked and released back into the lagoon. Four days later traps were laid again and 374 crabs were caught. Out of the 374 crabs, 80 were found to

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have been marked.

- Calculate the population size of crabs in the lagoon.

(2mks)

- State three assumptions that were made during the investigation.

(3mks)

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- What is the name given to this method of estimating the population size?

(1mk)

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- Other than the method named above, state any other two methods that are used to estimate population size.

(2mks)

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7) (a) Classify the bean plant in to each of the following taxa.

(3mks)

Kingdom

.....

Division.....

...

Class

.....

(b) Name the microscopic living threads that make up the body of a fungus.

(1mk)

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.....

c) State the structural differences between Gymnospermatophyta and Angiospermatophyta.

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(4mks)

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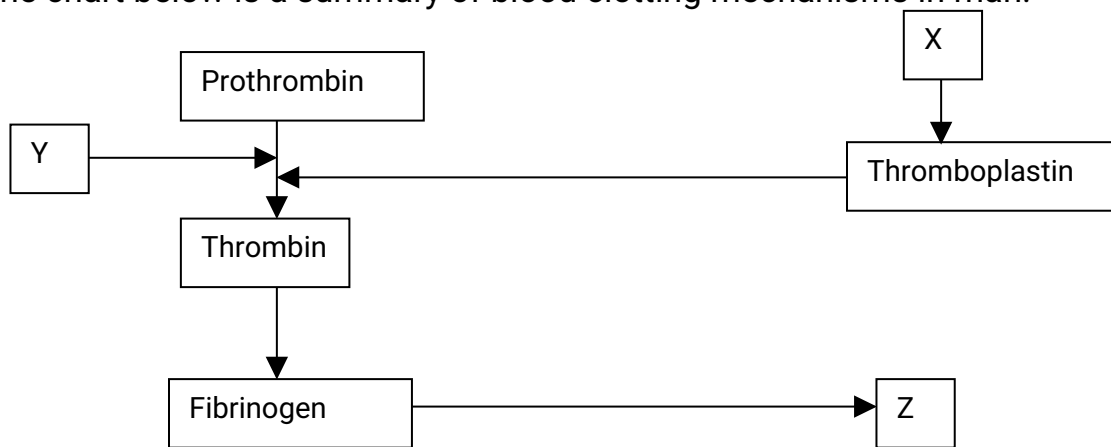
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8) The chart below is a summary of blood clotting mechanisms in man.



vi) Name

- i) The blood cells represented by X.
.....(1mk)

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ii) Metal ion represented by Y.
.....(1mk)

vii) Identify product Z and state its significance.

.....(2mks)

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viii) Name the process by which the human body naturally stops bleeding.
(1mk)

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ix) How can low blood volume be brought back to normal?
(2mks)

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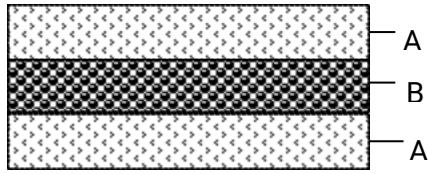
x) Give a reason why blood doesn't clot in unwounded blood vessels.
(1mk)

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9) The diagram below represents the general appearance of a section of the cell membrane under an electron microscope.



25.State the possible composition of layers A and B. (2mks)

A.....

.....B.....

.....

26.What is the significance the structure A in the membrane?

(2mks)

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27.State **two** properties of the cell membrane that make it efficient in its functions.

(2mks)

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28. Give **two** reasons why an electron microscope is useful in the study of the cell structure.
(2mks)

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Answer Question 6 (COMPULSORY) and either Question 7 or 8 in the spaces provided.

10) The data provided represents populations of a predator and its prey over a fifty years periods.

Time in years	Population in relative population of P (in thousands)	Numbers population of Q (in thousands)
5	24.5	17
10	30	20.5
15	33.5	26
20	33.5	30
25	31	33
30	27	32
35	25	30
40	29	27.5
45	32.5	28.0
50	34	28.5

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49. (i) Using the same axes, draw graphs of the relative populations of P and Q against time.
(7mks)

(ii) With a reason identify the curve that represents the prey.
(2mks)

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(iii) Accounts for the two populations between 25 and 32 years.
(2mks)

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(iv) Which years were the two populations equal.
(2mks)

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(v) Apart from predation, state three biotic factors that may have led to the decline of the prey population.
(2mks)

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50. Describe the hazards of air pollution by sulphur (IV) oxide.
(4mks)

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11) Explain how the mammalian heart is structurally adapted to its functions.
(20mks)

12) (a) Give any two functions of leaves in plants.
(2mks)
(b) Explain how leaves of mesophytes are suited to their functions.

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(18mks)

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Name: Adm no Class.....

231/3

BIOLOGY FORM THREE PP3

END OF TERM ONE

MARCH/APRIL 2020

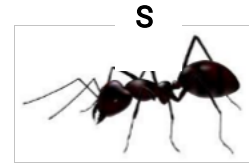
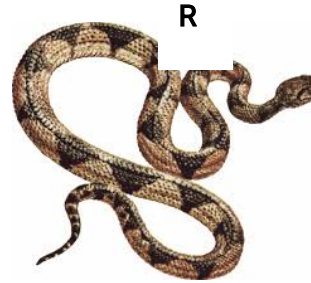
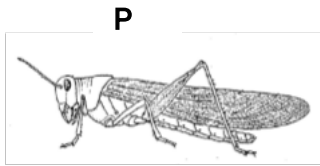
TIME: 2 HOURS

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INSTRUCTIONS TO CANDIDATES:

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

iii) Below are diagrams P, Q, R and S. Examine them.



51. Using observable features in the photographs, complete the dichotomous key given below.
(2mks)

1. a) Animals with legs.....go to 2
b) Animals without legs.....snake
2. a) Animals with two body partsspider
b)go to 3
3. a) locust
b) Animals without wings.....Ant

52. In each case show steps followed to arrived at the identity.
(4mks)

Organism	Steps followed	Identity
P		Locust
Q		Ant
R		Snake
S		Spider

53. Name the main characteristics used to classify members of the phylum Arthropoda. (3mks)

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54. State **five** economic importance of insect.
(5mks)

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55. Using observable features only show how specimen P adapted for locomotion.
(2mks)

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iv) You are provided with a specimen Q.
Obtain two equal cubes about 1cm in length from specimen Q. Crush one of the cubes and place it in test tube labeled B. Place the other cube as a whole in test tube labeled A. In to each of the test tubes add 10cm³ of hydrogen peroxide.

13) State the observations made in test tube B.

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(1mk)

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14) Explain the results in a (i) above.

(1mk)

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.....

15) Write an equation for the breakdown of hydrogen peroxide.

(1mk)

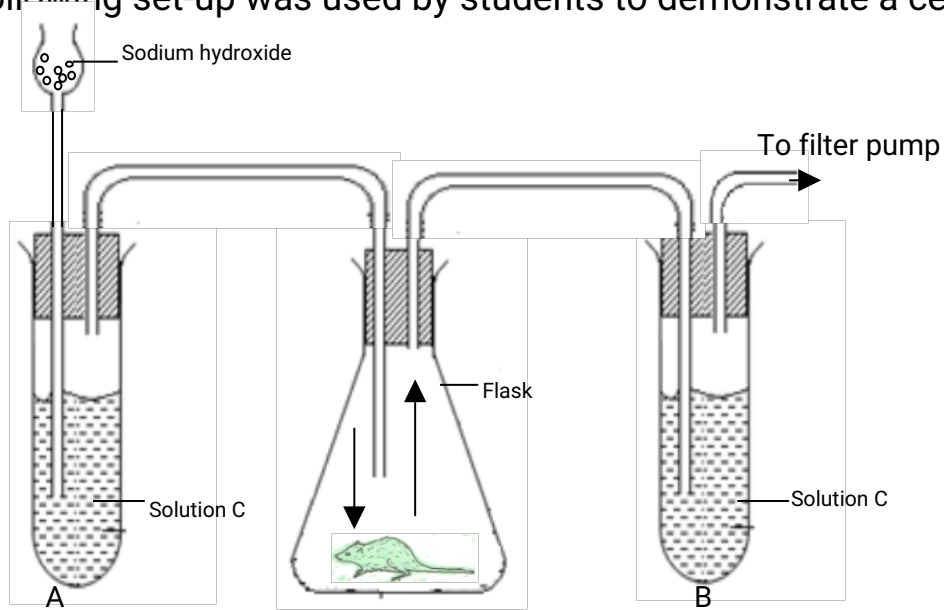
16) Peel the remaining half of specimen Q and crush it in a mortar. Using the reagents provided test for the various food substances in the extract obtained from crushed material. Record the procedures, observations and conclusions in the table below.

Food substance	Procedure	Observations	Conclusions

1

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v) The following set-up was used by students to demonstrate a certain process.



s) Identify the process being investigated.
(1mk)

.....

.....

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t) Name solution C

(1mk)

.....
.....
.....

u) State the observations expected at the end of the experiment in:-

Tube

A.....(1mk)

Tube

B.....(1mk)

v) Account for the observations made in:-

(2mks)

Tube

A.....

.....
.....

Tube

B.....(2mks)

.....
.....

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w) If the animal was replaced by a potted plant.

xi) What modification would you make in the set-up above?
(2mks)

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.....
.....
.....

xii) Give a reason for your answer in d (i) above.
(2mks)

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.....
.....
.....

NAME _____

INDEX NO _____

DATE _____

CANDIATES SIGNATURE _____

565/1

BUSINESS STUDIES

PAPER 1

TIME: 2HRS

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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

This paper consist of 7 printed pages candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing

ANSWER ALL THE QUESTIONS

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

vii) The diagram below shows a shift of the demand give of a commodity from d_0 to d_1 . Outline any four factors that could have led to the shift (4mks)

d_1 d_0 s_0
price (sh)
9

1

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so $d_1 d_0$
quantity

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

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

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

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

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

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

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

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

xvii) 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)

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

1

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

xx) Give any four challenges faced by human beings in their endeavour to satisfy human wants (4mks)

xxi) 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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- xxii) Name any four occupations that are found at the extractive level of production (4mks)
- xxiii) Outline any four advantages of small-scale retailers over large-scale retailers (4mks)
- xxiv) Highlight any four methods used to determine prices of goods and services in the economy (4mks)
- xxv) Outline any four challenges that entrepreneurs face in Kenya (4mks)
- xxvi) Highlight four characteristics of free resources (4mks)

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xxvii) Give four advantages of self employment (4mks)

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

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

l) Brand name and other features of the brand features more prominently –

m) Advertising that aims at popularizing a new product –

n) Advertising that popularizes the business organization –

o) Used by organization that deals with similar products to convince potential customers to buy their products and not the other –

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

NAME _____

INDEX NO _____

DATE _____

CANDIATES SIGNATURE _____

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565/2

BUSINESS STUDIES

PAPER 2

TIME: 2 ½ HRS

INSTRUCTIONS TO CANDIDATES

- 29. This paper consists of six questions
- 30. All questions carry equal marks
- 31. Answer any five questions

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

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

do do-demand curve

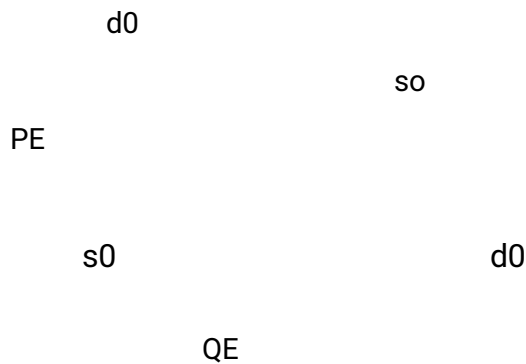
so so - supply curve

PE -Equilibrium point

QE -Equilibrium quantity

1

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

18) 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)

c) 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)

d) 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)

e) 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)

f) 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)

CHEMISTRY

1

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THEORY

PAPER 1

FORM III END OF TERM 1

Name:class:Adm no:school:.....

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

xiv) 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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.....
.....

xv) The table below shows the relative atomic masses and the percentage abundance of the isotopes T₁ and T₂ of element T

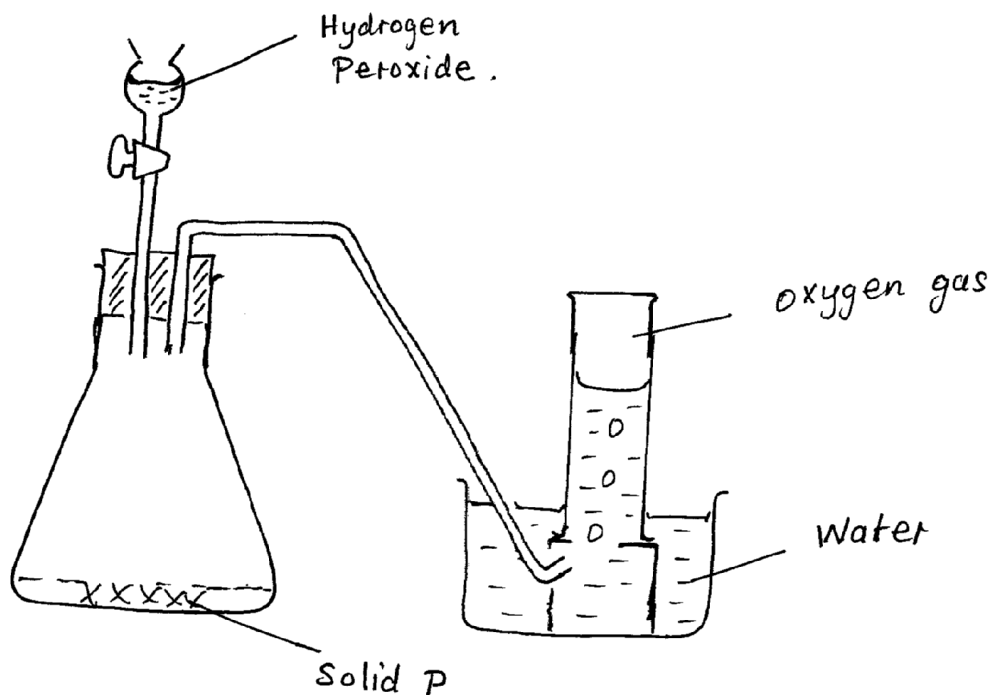
	RAM	% abundance
T ₁	62.93	69.09
T ₂	64.93	30.91

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

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



a. Name solid P.[1 mk]

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

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

i.

ii.

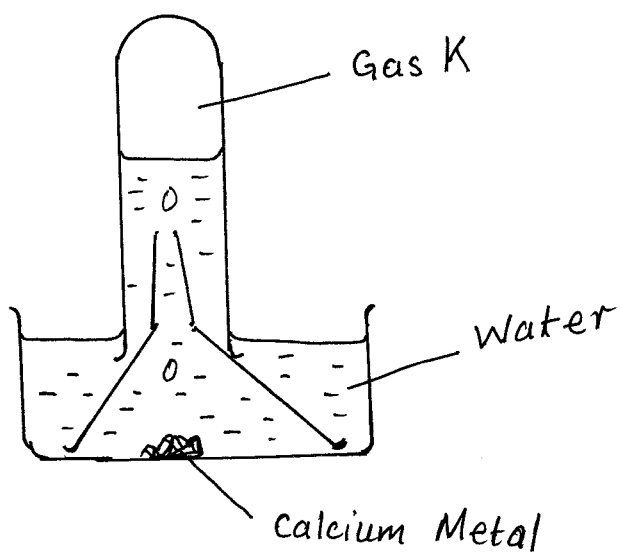
xvii) State two reasons why hydrogen is not commonly used as a fuel [2 mks]

i.

ii.

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xviii) 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]

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

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

xx) 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]

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

.....
xxii) 20g of solid sodium hydroxide were dissolved in distilled water and made to 400cm³. 30 cm³ of this solution required 27 cm³ of dilute sulphuric (iv) acid for complete reaction. [Na=23 O=16 H=1]

Determine

i. Moles of sodium hydroxide contained in 30 cm³ of solution [2 mks]

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ii. Moles of sulphuric (iv) acid that reacted

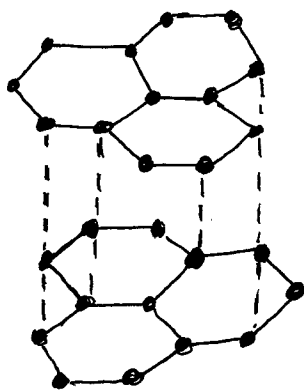
[2 mks]

.....
.....
.....

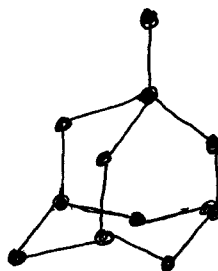
.....Concentration of
the sulphuric (iv) acid in moles per litre [2 mks]

.....
.....
.....

xxiii) 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.....

b. Give two uses of allotrope B

[2 mks]

i.

ii.

c. Which allotrope conducts electricity? Explain.

[2 mks]

.....

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.....

xxiv) An oxide of element F has the formula F_2O_5 [1 mk]
a. Determine the oxidation state of F.

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

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

.....
.....
.....
.....

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

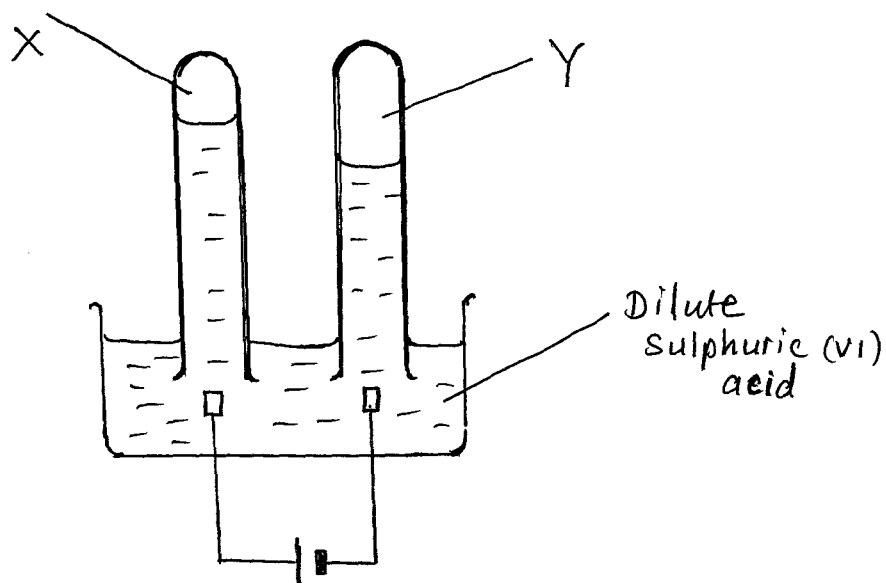
- i.
- ii.

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

.....
.....
.....
.....

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.....
.....
.....
xxviii) 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]

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

a. Copper metal.....

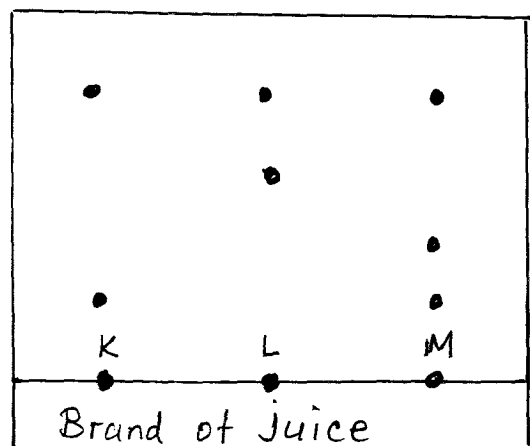
.....
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b. Copper II nitrate.....

.....
.....
.....

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xxx) 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]

xxxi) 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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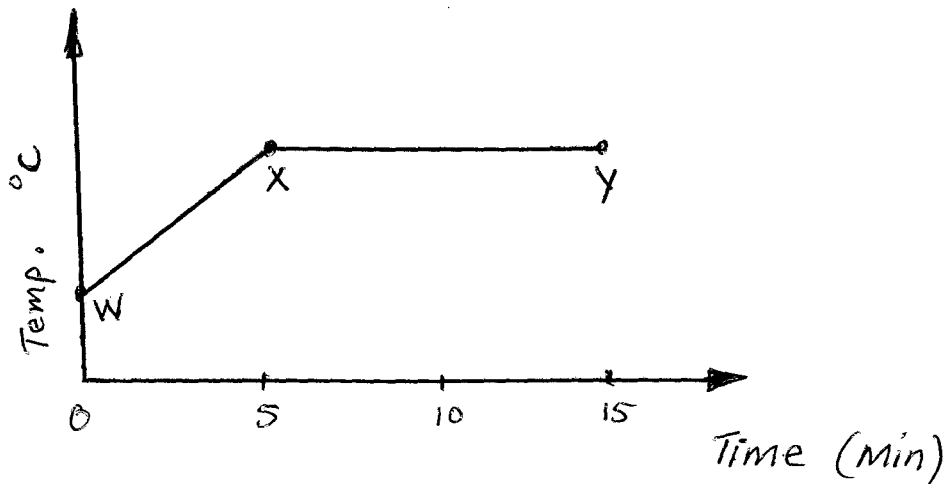
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xxxii) The graph below shows a curve obtained when water at 20 was heated for 15 mins.



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

.....

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

.....

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

.....

xxxiii) Write down the formula of the following compounds

i. Potassium manganate vii.....[1mk]

ii. Aluminium oxide[1mk]

iii. Iron III chloride[1mk]

xxxiv) Write balanced equations for the following reactions

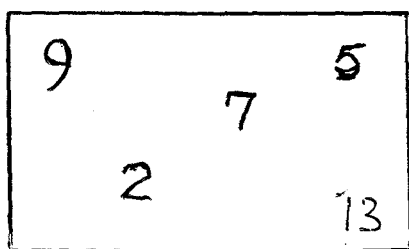
a. Reaction between sodium and excess oxygen [1mk]

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b. [1mk]

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

xxxv) 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]

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

xxxvii) (a) What is rust? [1mk]

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.....

(b) Give two advantages of rusting.

(i)[1mk]

(ii).....[1mk]

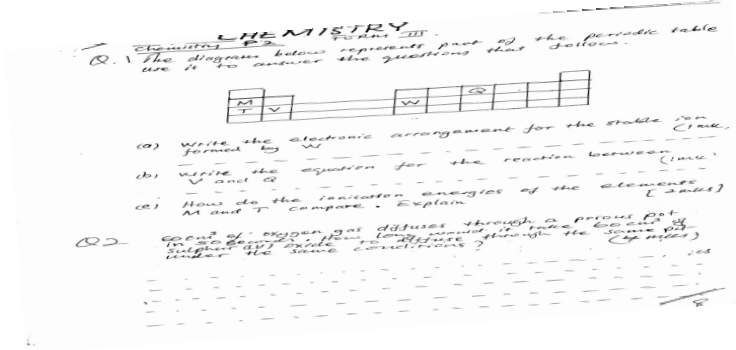
CHEMISTRY P 2 FORM III

TIME: 2 ½ HOURS:

NAME:..... CLASS:.....ADM NO:.....SCHOOL:

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)

.....

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

.....

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

.....

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.....

Q 2. 60 cm³ of oxygen diffuses through a porous pot in 50 seconds. How long would it take 60 cm³ of oxygen gas diffuses through a porous pot in 50sec. How long would it take 60cm³ of Sulphur (iv) oxide to diffuse through the same pot under the same conditions? (4mks)

.....

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.....

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

i).....

ii).....

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 reacted completely with 40cm³ of 0.5m sulphuric (iv) acid

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

.....

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.....

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

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.....

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 20°C and $98,648.5\text{pa}$, Calculate its volume at 101325pa and 0°C (3mks)

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

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.....

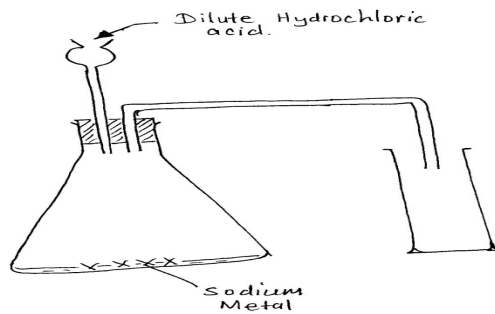
b) State one property of aluminum that makes it suitable for power transmission cables (1mk)

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

Q 8 The diagram shows a set-up for preparing hydrogen gas by a form 3 student.



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

(b) On the diagram, ^{make} suitable modifications to solve the mistakes in (a) above. (3 mks)

(c) What is the test for hydrogen gas? (1 mks)

a) Identify three mistakes with the set-up

(3mks)

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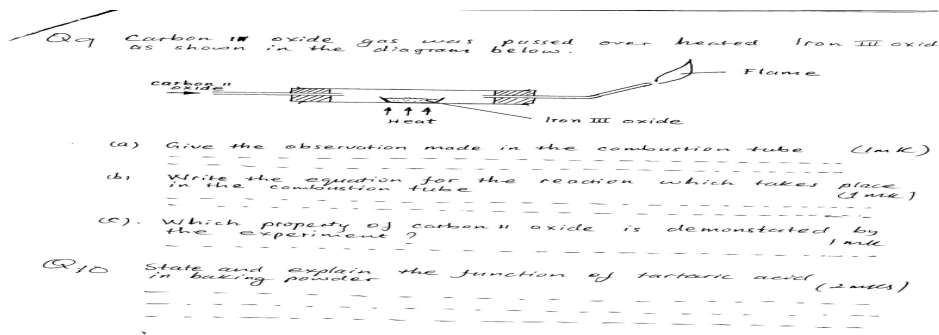
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b) On the diagram make suitable modification to solve the mistakes in (a) above (3mks)

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

.....

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



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

.....
.....

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

.....

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

.....

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

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

58. Which gas is contained in tizzy drinks? 1mk)

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

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

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

(a). Identify substances removed from chambers A and B (1mk)
 A ----- (1mk)
 B ----- (1mk)

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

(c). Name one gas which escapes from the chamber containing heated magnesium powder. (2mks)
 Give a reason for your answer
 Gas -----
 Reason -----

Wh
ma

or

1

a) Identify substances removed from chambers A and B then

A (1mk)

B..... (1mk)

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

.....
.....

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

Give a reason for your answer (2mks)

Gas

Reason

.....
.....

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

x) Identify gas X (1mk)

.....

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

.....

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

.....

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

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

.....
.....

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20) 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).

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 elements)

Element	Electronic Configuration	Ionisation Energy
P	2, 1	219
Q	2, 8, 1	494
R	2, 8, 8, 1	418

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

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

(c) Explain why element P has the highest ionisation energy (2mks)

(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 these observations (3mks)

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

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

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

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

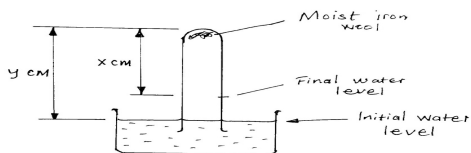
(1mk)

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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 risen. No further change took place when the set-up was left for more days even though not all the iron rusted.

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

Q18 - 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 risen. 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 (2marks)

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

.....
.....
.....

21) Write an expression for an approximate percentage of air used up

(1mk)

.....
.....

22) What would be the effect on the level of the water if a larger piece of iron wool was used

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(2mk)

.....
.....
.....

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

.....

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

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

Element	G	H	I	J
Number of protons	2	17	19	19
Number of neutrons	4	20	18	22

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

b) Which atoms have the same mass number? (2mks)

c) Write the formula of the compound formed between G and H

Q 20. Give the valency of each of the elements (1mk).
or radicals in the following chemical compounds (3mks)

i) $\text{Ca}(\text{PO}_4)_2$
ii) Mg_3N_2
iii) NaOH

(2mks)

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

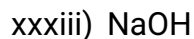
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24) Write formula of the compound formed between G and H (1mk)

.....
.....

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

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



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ADM NO: _____

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DATE: _____

MARCH

ENGLISH 101

MARCH FORM 3 JOINT EXAMINATION

K.C.S.E

101/1 ENGLISH

TIME: 2HRS

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ENGLISH PAPER 1

25) 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)

26) 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 cease to be

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

- y) Construct the rhyme scheme of this poem.
- z) Which pair of words rhyme in this poem?

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- aa) Which words would you stress in the first and second line and why?
- ab) What is the effect of repetition in this poem?
- ac) How would you perform the first two lines?
- ad) How would you say the last stanza.

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

- 60. Frowning
- 61. Pacing up and down
- 62. Shrugging shoulders
- 63. Winking
- 64. 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)

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

xxxix) The prefect was privileged to have special diet.

xi) The students managed to rescue their colleague's from the burning dormitory.

xli) The professor managed to convince the crowd to vote for him.

xlii) The collage will close for one week to allow for repairs.

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xliii) Lack of proper maintenance on any machine makes it to break down frequently.

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NAME: _____

ADM NO: _____

DATE: _____

ENGLISH 101

MARCH/APRIL FORM 3 JOINT EXAMINATION

K.C.S.E

101/2 ENGLISH

TIME: 2½ HRS

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ENGLISH PAPER 2 – FORM 3

27) *Read the passage below and answer the questions that follow:-*

THE DETOX DEBATE

Detox kits and supplements are recent health fads. But can they really help you lose weight fast? Online weight loss coach Adrew Cate investigates.

We've heard a lot about the need to detox lately. It is the term used to describe a strict program of elimination and supplementation that's meant to rid your body of impurities, cleaning your liver and kidneys, and flushing your bowel. It's suggested that toxins build up from consuming too much fat, sugar, alcohol, caffeine, preservatives, and pollution.

There's no shortage of detox books, kits, and programs claiming to help you shed weight, improve your well being, cause your skin to radiate, and make you feel younger. The kits usually contain a dietary program, which is supplemented with a variety of vitamins, minerals, tonics, digestive aids, and laxatives. They are particularly popular in January as people feel the urge to begin the New Year afresh after overindulging during the festive season.

People will make drastic changes when they go on a detox diet and often feel better for starting a structured regime. However, detox kits made up of herbal laxatives and diuretics are unnecessary and have generally to have no blood of fats, alcohol, and other nasties – all without the help of a fancy box from your local pharmacy. There is no scientific evidence to support specific detox diets, programs, or supplement kits. However, there's no debate about the fact that eating less junk food, cutting out cigarettes and your alcohol intake, etc will benefit your health. For example, drinking more water and cutting out caffeine will improve your hydration levels, while reducing your portion sizes and increasing your vegetable intake will improve bowel function. These changes will enhance your well-being, but there's nothing magical about the detox diet itself. Rather, it's the associated lifestyle changes that benefit your health.

Detox kits that contain laxatives and diuretics to encourage you to fast could, potentially, do more harm than good. Laxatives speed up your bowel motions, but also prevent the absorption of nutrients, while diuretics can result to partial dehydration.

The fasting components of a detox should only be minimal, and not extend beyond a day or two. By eating next to nothing, you are not getting enough nutrients for the essential functions of your body. Supplements are no substitute for real food, and relying solely on them can result in vitamin deficiencies. Fasting is also known to slow down your metabolic rate, which encourages your body to store fat, making it harder to lose body fat in the future.

If you've spent weeks, months or years overindulging drinking and smoking you can't hope to fix yourself in a few days. Detox diets aren't an instant cure to health and wellness. Short-term changes to your diet and lifestyle over the long term, there's no point starting them, as they won't have any serious impact upon your health.

g) What is **detoxing**? (2 mks)

h) From the information given in the passage, what builds up toxins in the body? (2 mks)

i) Give the contents of the detox kit. (2 mks)

1

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- j) When do detox kits sell most? (1 mk)
- k) In about 80 words, summarize the writer's arguments on whether we need to detox or not. (5mks)

Rough copy

Fair copy

- l) Outline the dangers of detox diets. (3 mks)
- m) Add a question tag to the following statement. (1 mks)
Detox diets aren't an instant cure to health and wellness,
- n) We've heard a lot about the need to detox lately. (Rewrite the sentence as a question without changing the meaning). (1 mks)
- o) Explain the meaning of the following words as used in this passage. (3 mks)
Laxatives

Overindulging

Deficiencies

Read the story below and then answer the questions that follow;
KAHURU THE CROW

1

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One day Wamabuku, the rabbit decided to give a party. He invited all the other animals that had invited him before to similar parties. For the party Wamabuku had slaughtered many fat goats and cows. On the day of the party, Wamabuku got all his servants to decorate his house for the fiesta. All the animals arrived in rapid succession – Wamuthige the hyena and his family, Wamacege the porcupine, Kahuru the crow and many others.

The animals ate the meat to their satisfaction. After the meal they began to dance. In the evening, the party was over and animals prepared to leave. Wamuthige the hyena and his family being greedy animals decided to get more meat from Wamabuku was surprised at their greed and decided to teach them a lesson. Wamabuku told the hyena that only the “undesirable” fat meat was remaining. Since hyenas love fat meat their mouths became moist with saliva.

Wamabuku then sent his servants to the garden to collect all his young thriving gourds. The gourds were split into halves. The succulent white inside called “mego” was removed. Since it is exceedingly bitter so liquid fat was poured over the ‘mego’. The hyenas were shown the melting mego. At the sight, the hyenas became panicky.

Wamuthige, after some thinking, called “Kahuru,” he said, please get a thread and needle. Then come and knit out outlets tight so that when we have eaten all this melting meat, we shall not waste any. It is so sweet and we can’t afford to have delicacies waste.”

Kahuru, being a kind-hearted family, went to fetch a needle and thread. Meanwhile the hyenas ate nearly all the mego. When Kahuru returned with the needle and thread he was asked to start his operation on the hyenas.

The mego in the hyenas stomachs had intermingled with the meat and other food. All the hyenas were suffering from flatulence. When Kahuru started, the hyenas started to get stouter and stouter due to the air in their stomachs. The hyenas brought their hindquarters as near to Wakahuru as possible so that Wakahuru did not miss any.

When the hyenas were so swollen up that they could swell no more all their back openings burst with pressure. All the stuff from inside the hyenas liquid and solid, was deposited on him. So much was put there, that he lay covered all over and helpless. The hyenas left without helping Kahuru from his disgrace. Kahuru did not know what had happened and anyway, he was not to blame.

That night, the rain fell in abundance and drenched the countryside. Kahuru was cleaned. He flew to the nearest tree and perched there. In the morning he found he could see and flew to his home.

A few weeks later Kahuru decided to give a feast especially for the hyenas. He notified Wamuthige, who collected all the hyenas. The party was to be in Kahuru’s home. Kahuru was to carry all the hyenas up, since hyenas don’t fly. Kahuru chose a spot where the hyenas could assemble, and told them to hold each other by the tail. Then Kahuru would take Wamuthige who would be in the front. Thus all the other hyenas would be pulled behind in a long string.

While they were waiting, the hyenas hunched, singing.

We are going up high to eat fat, fat meat,

And we we say ‘fat’

We mean meat purely white

When Kahuru arrived and picked up the first hyena all others followed still singing happily. When they had flown up many miles, Kahuru shouted at the last hyena, “Can you still see the ground?” “Yes,” was the reply. They flew on, still singing until they could see the ground no longer.

Then Kahuru told the hyenas to stop singing and make ready for “white” meat. Then all of a sudden, he let Wamuthige go, and through the air the hyenas dropped. The fall was a great one.

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Kahuru flew down, and from a safe distance, jeered teasingly at the groaning, fractured cripples. Then he flew happily back to his home.

QUESTIONS:

65. Classify this narrative. Give reasons (2 mks)
66. Identify three features in the narrative and explain the effect of each. (3 mks)
67. State and explain the character trait of
ae) Wamuthige (1 mks)
- af) Kahuru (1 mks)
68. What do we learn about the socio-economic activities of the people from whom this narrative was taken? (4 mks)
69. What is the function of a song in this narrative. (4 mks)
70. (i) Give **one** moral lesson that we learn from this narrative. (1 mks)
- (ii) Suggest a proverb to summarize the lesson you have given. (2 mks)
- (iii) State **two** performance techniques that would be used to make this narrative enjoyable. (2 mks)

The River and the source by "Margaret Ogola pg 22-23
Feel free to do so..... Ayie, I have accepted.
xxxiv) Place the extract in its immediate context (4mrks)

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xxxv) "Women are all the same Owour- lets get out of here" said Otieno. Write in reported speech.
(2mrks)

xxxvi) Explain the character of

f) The chief- Owour

g) Odero

h) Otieno

(6mrks)

xxxvii) Explain the meaning of the underlined words

32. You will be Owour Kemboi a man of style the famous or who paid up without demur.

33. Why should these people vip us like this.

34. A son in law had to comport himself with great dignity. (3mks)

xxxviii) Identify and explain two styles used in the extract.

e)

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f)

xxxix) "All women are not the same". The Chief observed. Explain what happens later in the novel to justify this in the life of the chief (2mrks)

xl) Why is Akoko feeling that her father should give her a piece of land. (2mrks)

xli) Why is the " Mikai" important in this culture" (2mrks)

GRAMMAR

Use the correct form of words in brackets to complete each of the following sentences (3mks)

g) Nobody expected the company to make _____ (lose)

h) The three _____ (passer-by) were arrested.

i) She has spent a lot of time _____ (beautiful) her compound.

Correct the errors in the following sentences

s) It is an important occasion

t) The cite was lovely

u) It is embracing to mispronounce words (3mks)

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Fill in the blank forming adjectives from the given in brackets.

xliv) John was _____ of his neighbours success (envy)

xlv) I felt _____ about not being able to help (awe)

xlvi) He took a _____ leave after the father died (compassion) (3mks)

Fill the blank spaces with the correct preposition

7. I am indebted _____ him for the help he gave me.

8. She has always confided _____ him.

9. The ailing man has been in bed _____ the whole week. (3mrks)

Rewrite the following sentences according to the instructions given. Do not change the meaning.

- He threatened us. He was insolent

(Begin: Not only)

- You will only succeed if you work hard

(Rewrite using unless)

- When the people burst into the councillors office he had not even sat down.

(Begin hardly)

Name :.....Class;.....Adm No:.....

END OF TERM EXAM

GEOGRAPHY – FORM THREE

PAPER 1

TIME 2 ¾ HOURS

TERM 1 – 2020

INSTRUCTIONS.

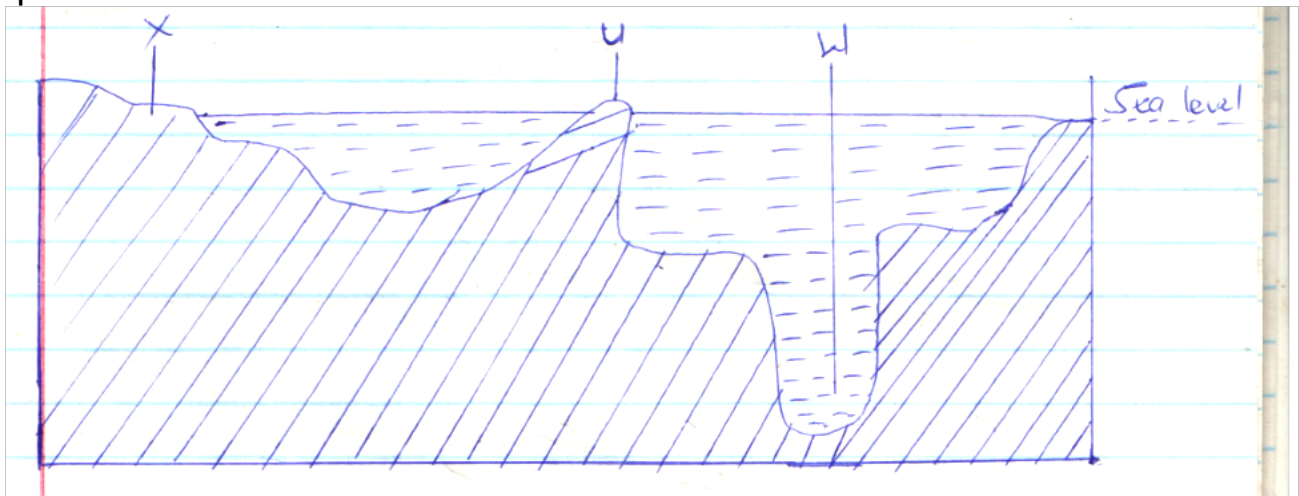
1

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- j) This paper has two sections A and B
- k) Answer all the questions in section A.
- l) Answer questions 6 and any other two questions from section B.

SECTION A

- p) a) What is the relationship between Geography and Mathematics? (2mks)
 b) State four reasons why it is important to study Geography. (4mks)
- q) a) Name the two layers of discontinuity that are part of the interior structure of the earth. (2mks)
 b) State three characteristics of the outer core in the interior structure of the earth. (3mks)
- r) a) Name two forms of precipitation that commonly occur in Kenya. (2mks)
 b) What is a steveson’s Screen? (2mks)
- s) a) Identify two causes of earth movements. (2mks)
- t) a) The diagram below represents the relief of the ocean floor, use it to answer questions.



- 35. Name the features marked U, W and X. (3mks)
 X
 W
 U
- 36. Give three reasons why ocean are saline. (3mks)
 b) State one characteristic of Rift Valley lakes. (1mk)
 c) Name one salt water lake that lies north of the equator in Kenya. (1mk)

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SECTION B.

Answer questions 6 and any other two questions from this section.

- u) Study the map of Busia 1:50,000 (sheet 101/1) provided and answer the following questions.
- xlii) What is the vertical interval of the area covered by the map? (1mk)
ag) Give the six figure grid reference of the chiefs house. (2mks)
ah) What was the magnetic variation of the area when the map was drawn? (1mk)
ai) What is the height of Odiado hill? (2mks)
- xliii) Measure the distance of the international boundary from point where it crosses Northing 41 to Northing 50 (Give your answer to the nearest 100 metres) (2mks)
i) Calculate the area enclosed by river sio, south of Northing 50, West of all weather road, loose surface ($B^8/3$) and East of the international boundary. (2mks)
- xliv) Using a vertical scale of 1cm to represent 40metres, draw a cross section along Northing 37 from Easting 24 to Easting 31. On the cross-section mark and name. (7mks)
10. All weather road, loose surface
 11. River
 12. Swamp
 13. Hill
 14. Riverine trees
- j) Calculate the vertical exaggeration of the cross section. (2mks)
k) Determine the intervisibility of the section you have drawn. (1mk)
- xlv) Describe the drainage of the area covered by the map. (5mks)
- v) Define chemical weathering. (2mks)
71. Explain how crystal growth leads to weathering. (5mks)
72. Geography students in your school are planning to carry out a field study on rock weathering around your school.
- 28) Apart from crystal growth, name five other mechanical weathering processes they are likely to study in the area. (5mks)
- 29) State five importance of each of the following for your study.
a. Reconnaissance (5mks)
b. Working schedule (5mks)
- 30) Which three problems are you likely to experience while collecting the data in the field? (3mks)

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w) Describe how a river erodes its channel through the following processes. (6mks)

xlvi) Abrasion

xlvii) Solution

xlviii) Hydraulic action

b. Explain four ways through which a river transports its load. (8mks)

c. State three factors that determine a river ability to transport its load. (3mks)

ii. Highlight four ways through which a gorge may be formed. (4mks)

iii. State four significance of rivers in Kenya. (4mks)

x) What is an earthquake? (2mks)

v) Using a simple diagram explain the following terms. (5mks)

Epicenter

Seismic focus

Shockwaves travel outwards

• Explain four human causes of Earthquake. (8mks)

w) Name the two types of Earthquake waves. (2mks)

• Differentiate between:

g) Deep focus earthquake and shallow focus Earthquake. (2mks)

h) Richter scale and mercallic scale. (2mks)

• List four regions of the world where earthquakes are likely to occur. (4mks)

y) Distinguish between an ocean and a sea. (4mks)

ii) State three types of submerged coasts. (3mks)

iii) Explain two ways in which water moves in an ocean. (4mks)

iv) Explain four significance of oceans, coasts and coastal features. (8mks)

v. Describe the formation of the following features due to wave erosion. (6mks)

a. Wave cut platform and cliff.

b. Geo

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GEOGRAPHY PAPER 2

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END OF TERM 1 EXAM – 2020

FORM THREE

TIME:

SECTION A:

Answer ALL questions in this section in the spaces provided.

73. (a) Define the term environment. (2mks)

(b) State two types of environment. (2mks)

(c) Highlight three sources of pollution in the environment. (3mks)

74. (a) Identify three factors that influence the exploitation of minerals. (3mks)

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(b) Name the area where the following minerals are mined in Kenya.

i) Diatomite. (1mk)

ii) Salt (1mk)

75. (a) Distinguish between forest and forestry. (2mks)

(b) Identify three activities that may be undertaken in your school to conserve trees. (3mks)

76. The table below represents the rainfall and temperature data of station for one year. Study it and answer the questions that follow.

Month	J	F	M	A	M	J	J	A	S	O	N	D
Rainfall in (mm)	5	10	33	40	60	100	75	40	30	15	5	5
Temp °C	23	24	25	27	27	29	28	27	26	25	24	24

i) Calculate the following;
aj) Annual temperature range. (2mks)

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ak) Mean monthly temperature. (2mks)

al) Annual rainfall. (2mks)

77. Differentiate between field study and an excursion. (2mks)

SECTION B:

Answer ALL Questions in this particular section

78. (a) Name the major natural forests of the world. (3mks)

(b) Explain four factors that influence distribution of natural forests.(8mks)

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(c) Highlight comparisons softwood forests in Kenya and Canada. (6mks)

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(d) State three species of softwood found in Kenya and Canada respectively. (3mks)

Kenya –

Canada –

(e) Explain two problems facing forestry in Kenya. (4mks)

(f) State one importance of forest exploitation in Kenya. (1mk)

1

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79. Study the table below of a station B in a month of July and answer the following questions.

NE	E	S	N	SW	SE	W	NW	CALM
3	1	2	3	7	1	6	4	4

31) Use a suitable cartographic technique to represent the data. (8mks)

32) (i) State advantages of using the method in (a) above to represent the data. (4mks)

(ii) State the disadvantages of using the method. (3mks)

1

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33) (i) State five significances of statistics.

(5mks)

34) Name three methods of recording statistical data.

(3mks)

35) Differentiate between primary and secondary data.

(2mks)

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

1

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x) (i) Name the mining method shown in the photograph. (1mk)

(ii) Describe how minerals are obtained using the method shown in the photograph. (5mks)

y) Using evidence from the photograph suggest the time of the day when the photograph is likely to have been taken. (2mks)

z) Apart from the method shown in the photograph, name four other mining methods. (4mks)

aa) Name three problems the method used in the photograph can cause to the environment. (3mks)

ab) Explain five ways in which Kenya has benefited from the mining of soda ash in Lake Magadi. (10mks)

1

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NAME: ADM NO: CLASS:
FORM THREE HISTORY
PAPER 1
END OF TERM 1 EXAM – 2020
TIME: 2 ½ HOURS

INSTRUCTIONS:

This paper consists of three sections; A, B and C. Answer all the questions in section A, three questions in section B and two questions in section C.

SECTION A: 25 MARKS)

Answer all the questions from this section.

1. Give one unwritten source of information on the history of East African Coast. . (1 mk)

2. Name two areas where the Suba settled in Kenya. (2 mks)

3. Outline ways by which one can become a Kenyan citizen. (2 mks)

4. Give the dispersal area of the Eastern Bantu. (2 mks)

5. State the historical monument left behind by the Portuguese. (1 mk)

6. Give two characteristics of human rights. (1 mk)

7. Mention two Kenyan communities who offered a mixed reaction to British colonization. (2 mks)

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8. Outline one way in which the colonial government controlled the migration of Africans into urban centers. (1 mk)
9. What problems did the British Imperial East Africa Company encounter in administering the Kenyan protectorate? (2 mks)
10. State two operational bases established by the Imperial British East Africa Company in Kenya. (2 mks)
11. Identify two aspects of History. (2 mks)
12. State two advantages of using arbitration as a method of solving conflicts. (2 mks)
13. What was the main reason for the signing of Heigoland treaty of 1890? (1 mk)
14. State two ways in which education promotes national unity in Kenya. (2 mks)
15. Mention two circumstances under which an individual freedom of movement may be limited in Kenya. (2 mks)
16. Give two types of democracy. (2 mks)

SECTION B: 45 MARKS)

1

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Answer three questions from this section.

17. (a) Give five reasons why the Bantu migrated from their coastal settlement in Shungwaya. (5 mks)
- (b) Describe social organization of the Luo during the pre-colonial period. (10 mks)
18. (a) What were the roles of mission stations in the spread of Christianity in Kenya in the 19th century? (3 mks)
- (b) Explain six factors that facilitated missionary work in Kenya in the 19th century. (12 mks)
19. (a) Mention three African women who resisted British colonial rule. (3 mks)
- (b) Explain the causes of Agiriama resistance against the British colonial rule. (12 mks)
20. (a) Describe the reasons for the Akamba participation in long distance trade. (8 mks)
- (b) Give challenges facing industrial growth in Kenya. (7 mks)

SECTION C: 30 MARKS)

Answer any two questions from this section.

21. (a) Give five reasons why national integration is important. (5 mks)
- (b) Explain the causes of conflicts among the people of Kenya today. (10 mks)
22. (a) Give five circumstances under which a person's right to personal liberty may be limited in Kenya. (5 mks)
- (b) Explain five rights enjoyed by persons with disabilities in Kenya. (10 mks)
23. (a) Identify any three methods used by Europeans to establish their rule in Kenya. (3 mks)
- (b) Explain the results of Nandi resistance. (12 mks)

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NAME: CLASS: ADM NO:

FORM THREE HISTORY

PAPER 2

END OF TERM 1 EXAM 2020

TIME: 2 ½ HOURS

INSTRUCTIONS:

Answer all questions in section A, three questions in section B and two questions in section C.

SECTION A: (25 MARKS)

Answer all the questions from this section.

1. State the main characteristic of the stone age era. (1 mk)
2. Identify the methods of irrigation used by early Egyptian farmers. (2 mks)
3. State two results of the interaction between the Shona and the Ndebele during the pre-colonial period. (2 mks)
4. Identify the main features of colonial rule in Zimbabwe. (2 mks)
5. State the most important unifying item of the Asante Kingdom in the 19th century. (1 mk)
6. Mention two early forms of written communication. (2 mks)
7. State the two main duties of the Indigenous rulers in Northern Nigeria. (2 mks)
8. State one main reason for the use of barter trade in the Trans-Saharan trade. (1 mk)
9. What name was given to Kinjeketile's whispering campaign of spreading his ideas during the Maji maji rebellion. (1 mk)
10. State two factors that influenced the Neolithic revolution. (2 mks)
11. Who is credited with the invention of the cotton gin? (1 mk)
12. Identify two types of Monarchical government. (2 mks)
13. How does Jean Jacques Rousseau define government? (1 mk)
14. Give one scientific discovery in the field of medicine in the 19th century. (1 mk)
15. Give one physical feature of Australopithecus Boisei. (1 mk)

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16. Identify two places where Olduwan tools were found. (2 mks)
17. Give one problem experienced by using steam for energy. (1 mk)

SECTION B: (45 MARKS)

Answer any three questions from this section.

18. (a) Identify three advantages of space exploration. (3 mks)
- (b) Explain six economic effects of modern road transport. (12 mks)
19. (a) Give five reasons for the failure of the Maji maji rebellion. (5 mks)
- (b) Explain five reforms introduced by Germans after the Maji maji uprising. (10 mks)
20. (a) State three factors leading to development of Athens. (3 mks)
- (b) Discuss the impact of Agrarian and Industrial development on urbanization. (12 mks)
21. (a) Give three reasons for the coming of missionaries to Africa. (3 mks)
- (b) Discuss six obstacles missionaries encountered in spreading Christianity. (12 mks)

SECTION C: (30 MARKS)

Answer any two questions from this section.

22. (a) Give five factors for the failure of assimilation policy in French West Africa. (5 mks)
- (b) Explain the effects of British rule in Zimbabwe. (10 mks)
23. (a) State three factors that have led to growth of Johannesburg. (3 mks)
- (b) Identify six problems facing industrialization in South Africa. (12 mks)
24. (a) State three functions of the Katikiro of Buganda during the pre-colonial period. (3 mks)
- (b) Describe the social organization of the Shona during the pre-colonial period. (12 mks)

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JINA:DARASA:.....NAMBARI:.....

MTIHANI WA MWISHO WA MUHULA

MUHULA WA KWANZA – 2020

KISWAHILI KARATASI YA 1

INSHA

KIDATO CHA TATU.

MAAGIZO:

- li) Jibu maswali mawili.
- lii) Swali la kwanza ni la lazima.
- liii) Chagua swali moja kati ya maswali matatu yaliyobaki.
- liv) Kila insha isipungue maneno 400.

Maswali:

81. Lazima:
Andika mahojiano kati ya mwalimu mkuu na mzazi wa mwanafunzi aliyepotoka kimaandili.
(ala 20)
82. Rununu zimeleta madhara mengi kuliko faida. Jadili. (ala 20)
83. Andika kisa kudhihirisha ukweli wa methali.
'Nazi mbovu harabu ya nzima.' (ala 20)
84. Andika insha itakayomalizia kwa maneno haya. (ala 20)
'.....nilipo yakumbuka maneno hayo ya mama, nilihisi laity ningalijua.

JINA:DARASA:.....NAMBARI:.....

MTIHANI WA MWISHO WA MUHULA

MUHULA WA KWANZA – 2020

KISWAHILI KARATASI YA 2

KIDATO CHA TATU.

1

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Maagizo.

Jibu maswali yote .

1. **UFAHAMU (alama 15)**

Soma kifungu kifuatacho kisha ujibu maswali

Haki za watoto na wanawake

Makamishina wa Tume za Haki za Binadamu, waandalizi, waalikwa, watoto, mabibi na mabwana. Kwa muda mrefu kumekuwa na tofauti katika uhusiano baina ya wanajamii. Tofauti hizi zimewapelekea wanawake na watoto kudunishwa. Udunishaji unachukua mwelekeo mbaya zaidi kama watoto ni wa kike.

Kupuuzwa kwa wanawake na watoto kuna historia ndefu. Jambo hili limepata **usugu** kutokana na imani hasi **zilizoota akilini** mwa wanaume na hata wanawake. **Rasilimali** na majukumu yamegawanywa kwa misingi inayowatabakisha wanajamii kuanzia wanaume, wanawake halafu chini kabisa watoto. Katika jamii nyingi, wanawake na watoto wa kike hawarithi ,chochote ingawa ndio wenye mchango mkubwa katika uzalishaji mali. Aidha mchango wao kuhusu masuala muhimu nyumbani na katika jamii hupuzwa hate kama wamesoma kutiko waume na akina baba zao.

Inasikitishwa kuwa wanawake na watoto hawana sauti kuhusu uamuzi nyumbani. Wao hulazimishwa kutenda wanavyoamriwa na wanaume. Kwa mfano, si ajabu mwanamke kulazimishwe kupika pombe na watoto kusukumizwa kwenda kununua sigara. Yote haya ni kinyume cha matarajio ya Umoja wa Mataifa kuhusu haki za binadamu.

Ili kuzuia tabia ya 'ujuaji', wanaume wengi hupiga marufuku redio, simu, magazeti na televisheni kwa wanawake na watoto. Amri hii hutekelezwa vikali ill wahusika wasijifunze tabia ye **kukaidi amriza** wazee. Pengine hii ndiyo sababu katika jamii fulani, neno mzee lina maana moja tu; ya wanaume waliokomaa kiumri wale si wenawake. Hii si kweli.

Haki za binadamu ni msingi we utu. Bila haki hizo mwanadamu hawezi kutumia vipawa na uwezo wake wa kiakili na kihisia kikamilifu. Udunishaji wa wanawake na watoto unapingana na ukweli huu. Imanipotofu zinazoendeleza uovu huu zimejikita akilini na katika utamaduni. Zinahitaji kuondolewa. Nafurahi kuwa **mmeibua** mikakati thabiti ya kulipiga vita tatizo hili. Kwa kweli, sherehe kama hizi ni muhimu sana katika kuwafumbua macho wadau kuhusu haki za wanawake na watoto. Naamini hotuba zilizotolewa hapa zitakuwa mbegu zitakazochipua mabadiliko katika fikra na matendo ye watu. Yafaa watu wakubali kuwa mke na watoto ni wenza na wadau katika safari ndefu ye maisha.

Nimeona mabango, maigizo, ngoma na michoro ya waume kwa wake, wazee kwa watoto na wavulana kwa wasichana kuhusu made hii. Ujumbe umewasilishwa wazi. Ni **moyo uliofumwa kwa chuma** tu ambao hauwezi kuathiriwa na ujunibe kuhusu nafasi ya wanawake kurithi na kusikilizwa. Lakini vita vya panga haviamuliwi kwa fimbo. Kilichobaki sasa ni kufanya utatiti wa kukusanya data kuhusu mielekeo na itikadi zinazopingana na lengo letu. Kutokana na matokeo, mikakati iwekwe ili kuvunja nguvu, desturi zinazochochea taasubi za kiume.

Mabibi na mabwana, yapasa juhudi zifanywe za kusambaza habari kuhusu umuhimu wa kuheshimu na kujali binadamu wote na mchango wao. Aidha hatuna budi kuhakikisha nafasi sawa kwa kite mtu kutoa

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maoni na kusikizwa. Litakuwa jambo la kusikitisha kama jamii itasahau mchango wa wanawake na watoto katika kuzalisha na kulinda mali. Twahitaji kuondoa uoga kutoka kwa mama zetu wasiotaka mabadiliko. Sekta zote za umma lazima zijitahidi kutekeleza haya.

Ningependa kuwakumbusha kuwa kanuni za ubalozi haziniruhusu kuingilia masuala ya ndani ya nchi hii. Hata hivyo, nalazimike kushauri jambo moja. Nashauri ibuniwe Wizara ya Maendeleo ya Wenawake,

Vijana na Watoto. Wizara hii itakuwa na jukumu la kuondoa vikwazo dhidi ya wanyonge.

Kubuni wizara tu hakutasaidia. Wakereketwa washawishi mabadiliko katika sheria kuhusu wanawake na watoto hasa wajane na mayatima. **Wanaharakati** nao yapasa wahakikishe kuwa sheria hizo zinaheshimiwa. Shirika langu liko tayari kutoa msaada wa kifedha na kitaaluma kwa sababu hii.

Mambo haya yasikomee hapa. Mrudi mlikotoka na mbuni vikundi vya kutuatilia mapendekezo yaliyotolewa. Ni muhimu kusambaza mliyojifunza hapa ili mambo hayo yapenye kila nyumba. Asanteni.

(a) Tambua na kuthibitisha anayehutubia washika dau. (al.2)

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(b) Eleza mielekeo hasi inayopeleka wanawake na wanaume hudunishwa. (al.4)

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(c) Kwa kuzingatia swala ibuka la haki, orodhesha haki zozote tatu ambazo wanaume na watoto wananyimwa (al.3)

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(d) "Vita vya panzi haviamuliwi kwa fimbo" (al.2)

Fafanua

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(e) Taja mchango wa mwandishi wa hotuba hii katika kuirekebisha hali hii ya kudumisha wanawake na watoto. (al.2)

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- (f) Eleza maana ya
(i) Kukaidi amri

- (ii) Moyo uliofumwa kwa chuma

2. UFUPISHO

Ujambazi wa kimataifa ni tatizo lililowasumbua walimwengu kwa muda mrefu sana. Serikali nyingi zimetumia mapesa mengi kwa miaka mingi sana zikijitahidi kupambana na janga hili. Hata hivyo, fanaka haijapatikana, wala haielekei kamwe kuwa itapatikana leo au karne nyingi baadaye.

Yumkini tatizo kubwa lililopo ni kuhusu jelezi la dhana ya “ujambazi” tena “Wa kimataifa”. Hili ni tatizo mojawapo na yapo mengi sana. Tatizo la pili ni kiburi. Kuna wale watu binafsi na hasa viongozi wa nchi kubwakubwa na serikali zao zilizojaminisha kuwa ujambazi ni balaa kweli, tena belua, lakini huo ni wa huko, wala hauwezi kuwagusa licha ya kuwashtua wao.

Kulingana na maoni ya watakaburi hao, ujambazi ni wa watu ‘washenzi’ wasiostaarabika, wapatikanao katika nchi zisizoendelea bado. Ujambazi pekee wanaouona unafaa kukabiliwa ni dhidi ya mbubujiko wa madawa ya kulevya uliosababishwa na vinyangarika kutoka nchi hizo maaluni za “ulimwengu wa tatu”. Kulingana na wastaarabu wa nchi zilizoendelea, vinyangarika hivi ndivyo hasa adui mkubwa wa ustaarabu ulimwenguni na ni sharti vifagiliwe mbali bila huruma. Baada ya kusagwasagwa, ulimwengu mstaarabu utazidi kutoonoka na ahadi ya mbingu hapa ardhini itakamilika.

Imani ya watu hawa ya kuwa ujambazi wa kimataifa, hata iwapo upo, hauwezi kuwashtua wala kuwatingisha wao ilikuwa kamili na timamu. Ilikuwa kamili na timamu hadi hapo mwezi Septemba tarehe 11 mwaka wa 2001, ndege tatu za abiria zilipoelekezwa katika majumba mawili ya fahari, yenye urefu wa zaidi ya ghorofa mia moja na kuyatwangilia mbali. Mshtuko na kimako! Kimako kwa kuwa, kabla ya siku hiyo, Wamarekani hawangeweza kudhani kwamba ingewezekana taifa lolote au mtu yeyote kuthubutu kuishambulia nchi yao, taifa wasifa lililojihami barabara dhidi ya aina yoyote lie ya uchokozi kutoka pembe lo lote la dunia.

Hakuna ulimwenguni mzima, aliyeamini kuwa Marekani ingeweza kushambuliwa. Kwa ajili hiyo, mshtuko uliitingisha ardhi yote na huzuni ilitanda kote, kama kwamba sayari nzima imeshambuliwa, wala sio Marekani pekee.

Mintarafu hiyo, Marekani ilipolipiza kisasi kwa kuwaunguza waliokuwemo na wasiokuwemo kwa mabomu hatari huko Afghanistan, idadi kubwa ya watu duniani ilishangilia na kusherehekea. Kwa bahati mbaya, tafsiri ya shambulizi la minara-pacha ya Newyork na lile la Pentagon, uti wa uwezo wa kivita wa Marekani, ilizorota. Kuna wengi waliodhani huo ni mwanzo wa vita vya Waislamu dhidi ya Wakristo na kwa muda, Waislamu wote wakashukiwa kimakosa kuwa ni majambazi wa kimataifa.

MASWALI

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(a) Bila kubadilisha maana,fupisha aya tatu za kwanza maneno (65-75) (alama 8; 2 za utiririko)

Matayarisho

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Nakala safi

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(b) Ukizingatia aya tatu za mwisho fafana fikra za watu n amambo yote yaliyotokea baada ya Septemba 11 2001(Maneno 65-75) Alama 7:alama 1 ya utiririko)

Matayarisho

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Nakala safi

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3. **Matumizi ya lugha (alama 40)**

(a) Ainisha vielezi katika sentensi ifuatayo:
Mwanamke huyo alibebwa juu juu hadi kanisani. (al.2)

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(b) Bainisha jinsi maneno yaliyopigiwa mstari yalivyotumika. (al.2)
(i) Kula kwake ni chanzo cha afya yake nzuri.
(ii) "Kula vizuri kama unataka kuwa na afya bora".Daktari alisema.

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(c) Sauti /e/ na /u/ hutamkwa vipi? (al.2)

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d) Eleza matumizi matatu ya italiki kisha tolea mifano kwa kila aina. (al 3)

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e) Tunga sentensi ukitumia kitenzi kifuatacho katika kauli ya kutendeka - la (al-2)

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.....
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f). Andika katika usemi wa taarifa (alama 3)
"Hicho kijicho cha paka cheupe leo marufuku kwangu" alisema Mzee Kambumbu
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g) Tunga sentensi moja ukitumia kitenzi kimoja kilichoundwa kutokana na nomino **zawadi**
(alama 2)
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h). Tambua matumizi ya kiambishi **ji** katika sentensi ifuatayo (alama 2)
Jino la jitu hilo lililwezesha kujilia chakula kingi kuliko mkimbiaji yule
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i) Tunga sentensi moja kuonyesha maana ya neno: **sembuse**. (alama 2)
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j) Andika sentensi moja ukitumia kihisishi cha bezo (alama 1)
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K) Ainisha viambishi katika neno **waliibiana** (alama 2)
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l) Nini maana ya kiimbo? (alama 1)
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m) (i) Vokali ni nini? (alama 1)
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.....

(ii) Eleza sifa mbili za sauti ifuatayo **/i/** (alama 2)
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ac) Panda ni kuatika mbegu ardhini au kuparaga mti. Andika maana nyingine mbili (alama 2)

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ad) Andika katika wingi. (al 2)
Huzuni aliyokuwa nayo yatima huyu ilinitia kite na imani.

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36) Andika kinyume cha neno lililopigwa mstari. (al 1)
Mhalifu huyu alitunga mimba

ae) Bainisha matumizi ya **KI** katika sentensi ifautayo. (al 1)
Jua limekuwa likiwaka tangu Januari

af) Bainisha maana mbalimbali za sentensi ifuatayo: (al 3)
Mwalimu amempigia wanafunzi simu

ag) Silabi mwambatano ni nini? (al 1)

ah) Tunga sentensi moja udhihirishe maana mbili za neno hili: Rudi (al 1)

ai) Pigia mstari vivumishi katika sentensi ifuatayo kisha uandike aina yake. (al 2)
Bibi huyu ni mpole uso wake wenye haya huinamisha kila mara.

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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 $36 - 8 \times -4 - 15 \div -3$
 $-3 \times -3 - 8(-6 + -2)$ (3mk)

2. Simplify $\frac{a+b}{2} - \frac{2a-b}{3}$ (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 30° . From another point Q 8 metres from the base of the tree, the angle of elevation of the top of the tree is 48° .

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)

11. Use a calculator to work out

a)

(1mk)

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b)

(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 $\frac{3}{4}$ 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

$$\frac{9t^2 - 25a^2}{6t^2 + 19at + 15a^2} \quad (3mk)$$

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)

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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)

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

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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)

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)

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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)

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)

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ii) $2x^2=3x+2$

(3mk)

20. a) Plot triangle ABC with coordinates A(1, 1), B(3, 1) and C(1,3)

(1mk)

b) Plot A'B'C' the image of ABC under an enlargement scale factor 2 centre A and write down it's coordinates

(2mk)

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)

21 Three 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

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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)

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 $y= \sin x - \cos x$ for x in the range 0 , with y values to 2dp and x intervals of 30 (6mk)

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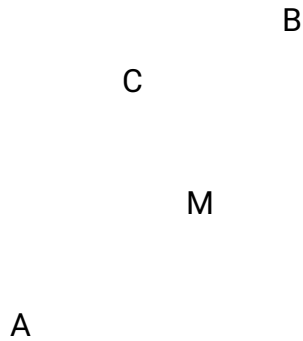
b) use the graph to find the value of y when

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 $CM=1\text{cm}$ and $AB=2\text{cm}$,

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)

b)the cuboid is filled with a liquid whose density is 0.75g/cm^3 . Calculate the mass in kg of the cuboid when full of the liquid (2mk)

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c) calculate the mass of metal lost in kg

(2mk)

FORM 3 MATHEMATICS END TERM EXAMS
Kenya Certificate of Secondary Education

TERM1 PAPER ONE
2020

1. Evaluate and simplify without using a calculator.

$$\frac{3\frac{1}{5} + \frac{1}{4} \text{ of } 3\frac{1}{2} - 5\frac{1}{6}}{2\frac{2}{3} - 1\frac{2}{5} \div 1\frac{1}{3} + 3\frac{3}{4}} \quad (3\text{mks})$$

2. The sum of interior angles of a polygon is 1980° . Find the number of sides the polygon has.
(2mks)

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3. Simplify as far as possible by rationalizing the denominator. (3mks)

$$\frac{1 + \sqrt{2}}{2 + \sqrt{3}} - \frac{1 - \sqrt{2}}{2 - \sqrt{3}}$$

4. Use table of reciprocal only to work out (3mks)

$$\frac{3}{0.6735} + \frac{13}{0.156}$$

5. Solve $3x - 2 \leq 5x - 6 < 2x + 12$ and represent your solution on a number line .
Hence state the integral values. (4mks)

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6. Evaluate without using mathematical tables. (3mks)

$$2 \log 5 - \frac{1}{2} \log 16 + 2 \log 40$$

7. Given that $P=2.6$ cm, $Q=4.0$ cm and $R=7.8$ cm. Find the percentage error in the expression. (3mks)

$$\frac{P + Q}{R}$$

8. From a point 20m away on a level ground the angle of elevation to the lower window line is 29° and the angle of elevation to the top line of the window is 32° . Calculate the height of the window. (3mks)

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9. The size of an interior angle of a regular polygon is 156° . Find the number of sides of the polygon. (2mks)

∴

10. The number 5.81 contains an integral part and a recurring decimal. Convert the number into an improper fraction and hence a mixed fraction. (3mks)

11. Simplify. (3mks)

$$\frac{2y^2 - xy + x^2}{2x^2 - 2y^2}$$

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12. Given that $\sin A = \frac{4}{5}$, $\cos B = \frac{5}{12}$ A and B are acute angles. Without using tables calculate
 $\sin B \cos A + \sin A \tan B$ (3mks)

13. A two digit number is such that the sum of the digits is 11 where the digits are reversed the number exceed the original number by 9. Calculate the original number. (3mks)

14. Two boys and a girl shared some money. The elder boy got $\frac{4}{5}$ of it, the younger boy got $\frac{2}{5}$ of the remainder and the girl got the rest. Find the percentage share of the younger boy to the girls share. (4mks)

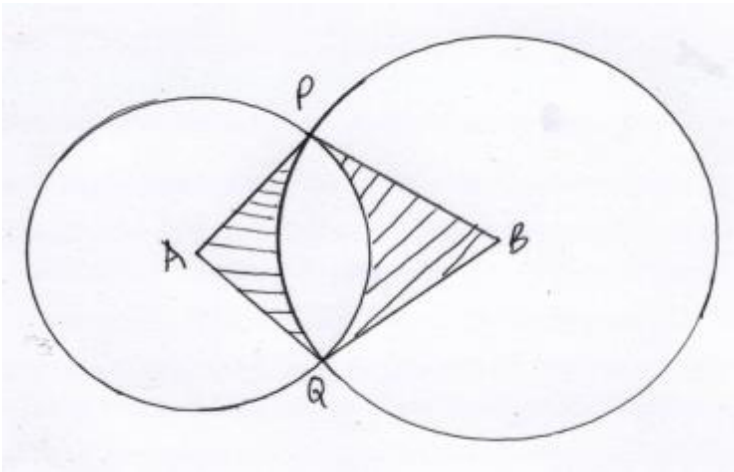
15. Solve the following simultaneous equations. (4mks)
 $x^2 - xy = 2$
 $x + y = 3$

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16. Use the table of squares, square roots and reciprocals to evaluate to 3 decimal places the question below. (4mks)

$$\frac{10}{\sqrt{0.625}} + (1.64)^2$$

17. The diagram below shows two circles centre A and B which intersect a point P and Q. Angle PAQ=70° and $\angle PRQ=40^\circ$ and PA=AQ=8 cm.



Use the diagram to calculate to 2 d.p
(a) the length PQ (2mks)

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(b) The length PB (2mks)

(c) Area of minor segment circle centre A. (2mks)

(d) Area of the shaded region (4mks)

18. The following table shows the heights to the nearest centimeter of some maize plants in a research farm.

Height (cm)	80-84	85-89	90-94	95-99	100-105	105-109	110-114	115-119
Frequency	5	14	16	17	24	12	11	4

(a) State the modal class (1mk)

(b) Find to 2 d.p

(i) Mean height (4mks)

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(ii) The difference between the mean height and the median height. (5mks)

19. (a) Three points A(0,4) B(2,3) and C(-2, -1) are vertices of a triangle. Find ;

(i) The gradient of AC (1mk)

(ii) The gradient of the perpendicular bisector of line AC (1mk)

(iii) The coordinates of the mid-point of line AC. (1mk)

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(b) (i) the gradient of AB (1mk)

(ii) The gradient of the perpendicular bisector of lines AB (1mk)

(iii) The coordinates of the mid-point of AB (1mk)

(c) (i) Find the equation of the perpendicular bisector of AC (1mk)

(ii) The equation of perpendicular bisector of AB (1mk)

(iii) Hence find the coordinates of the circumcentre of the triangle.(2mks)

20. The position vectors of points A and B with respect to the origin O, are $\begin{pmatrix} -8 \\ 5 \end{pmatrix}$ and $\begin{pmatrix} 12 \\ -5 \end{pmatrix}$ respectively. Points M and N are the mid points of AB and OA respectively.

(a) Find

(i) The coordinates of N and M (3mks)

(ii) The magnitude of NM. (3mks)

(b) Express vector \vec{NM} in terms of \vec{OB} (1mk)

(c) Point P maps onto P^1 by a translation $\begin{pmatrix} -5 \\ 8 \end{pmatrix}$ given that $OP = OM + 2MN$, find the coordinates of P^1 (3mks)

21. The information of a piece of land was entered in a field book as shown below.

E 50	180	F
	120	
	90	74 D
C 35	55	
	30	40 B
A	0	

(a) Sketch the map of the land (3mks)

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(b) Find the area of the land in hectares. (7mks)

22. (a) Draw the graph of the function $y=2x^2 + 4x - 3$ on the graph paper provided for $-4 \leq x \leq 2.5$ (5mks)

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(b) Use your graph to solve the equations

(i) $2x^2 + 4x - 3 = 0$ (2mks)

(ii) $x^2 + x - 5 = 0$ (3mks)

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23. The base of an open rectangular tank is 3m by 2.5 m and its height is 4m.
- (a) Calculate
- (i) The capacity of the tank in litres. (3mks)

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(ii) The total surface area in m^2 of the tank. (2mks)

(b) An open cylindrical tank has an equal capacity and same height as the rectangular tank in (a) above. Calculate ;

(correct to one decimal places)

(i) The radius of the cylindrical tank. (3mks)

(ii) The total surface area, in m^2 , of the tank. (2mks)

24. Transline bus left Nairobi at 8.00 and travelled Kisii at an average speed of 80km/h. Given that the distance between Nairobi and Kisii is 400km, calculate;

(a) The time the car arrived in Nairobi. (3mks)

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(b) The time the two vehicles met. (3mks)

(c) The distance from Nairobi to the meeting point. (2mks)

(d) The distance of the bus from Kisii when the car arrived in Nairobi. (2mks)

END TERM ONE, 2020 PHYSICS PAPER ONE

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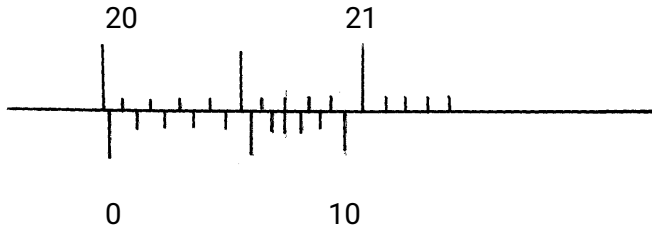
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SECTION A

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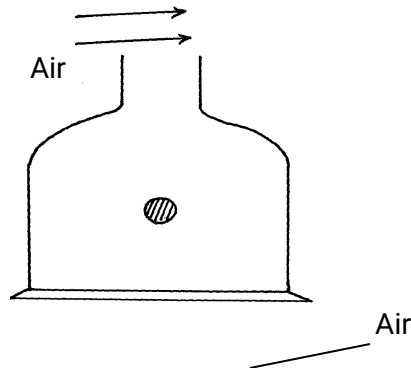
Answer all question

1. The figure below shows a diagram of part of a vernier caliper that has zero error of -0.02cm . Determine the length of the object using vernier caliper (2mks)



2. A block measuring $20\text{cm} \times 10\text{cm} \times 5\text{cm}$ rests on a flat surface. The block has a weight of 3N . Determine the maximum pressure it exerts on the surface (3mks)

3. The figure below shows a light body floating in a container

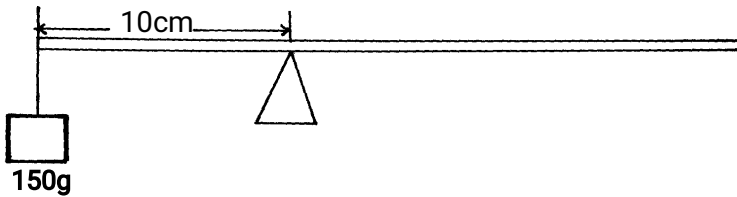


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State and explain the observation when a stream of air is blown over the mouth of the container as shown (2mks)

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4. A uniform half-metre rule pivoted at the 10cm mark, balances when a mass of 150g is suspended at the 0cm mark as shown below. Determine the mass of the half-metre rule. (2mks)



5. A person of mass 60kg stands on a spring weighing machine inside a lift. The lift is accelerated upwards at 3m/s^2 , calculate the reading of the weighing machine (3mks)

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6. A motorcycle accelerates from 8m/s to 20m/s in 10seconds. What distance does it cover in this time (3mks)

7. Explain why a hole in a ship near the bottom is more dangerous than one nearer the surface (2mks)

.....
.....
.....

8. $X\text{cm}^3$ of substance A which has density of 800kg/m^3 is mixed with 100cm^3 of water with a density of 1000kg/m^3 . The density of the mixture is 960kg/m^3 . Determine the value of X (3mks)

9. Explain in terms of the arrangement of particles the kinetic theory of matter. (3mks).

10. A hippo of mass 500kg is able to walk on a muddy river bank while a car of mass 220kg is not able. Explain (2mks)

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SECTION B: (55MARKS) ANSWER ALL QUESTIONS

11. (a) The table below shows values of pressure P in fresh water at different depth

Pressure P(Kpg)	110	140	180	200	220
Depth h(cm)	1.0	4.0	8.0	10.0	12.0

(i) On the grid provided, plot a graph of pressure against depths. (5mks)



(ii) Given that the equation $P = P_0 + \rho gh$, determine from the graph (I) the value of P_0 . (1mk)

(iii) The density of fresh water (4mks)

(b) The mass of density bottle is 20.0g when empty. 70g when full of water and 55g when

1

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full of a second liquid. Calculate the density of the liquid

(take density of water to be 1000kgm^{-3})

(4mks)

12. a) Explain why it is easier to ride a bicycle round a bend on a road if the surface is dry than when it is wet (2mks)

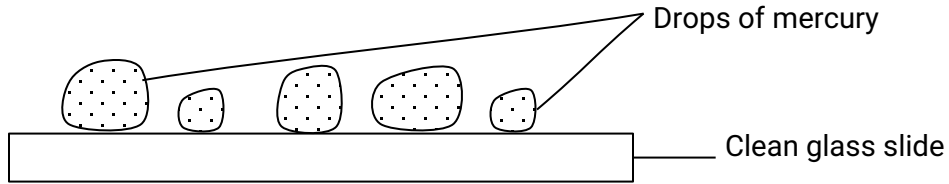
b) Give **one** difference between limiting and dynamic forces of friction (2mks)

c.) Mercury on a clean glass slide collects into small spherical balls as shown in figure below.

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Explain why (2mks)



d.) State Pascal's principle of transmission of pressure(2mks)

e.) A helical spring extends by 1 cm when a force of 1.5N is applied to it. Find the spring constant. (2mks)

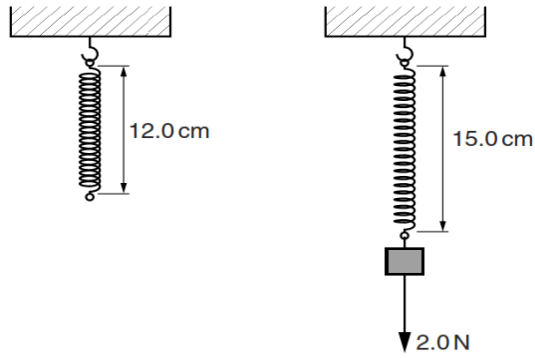
17(a) State Hooke's law

(1mark)

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(b) A student hangs a spring vertically from a hook, as shown in Figure below.

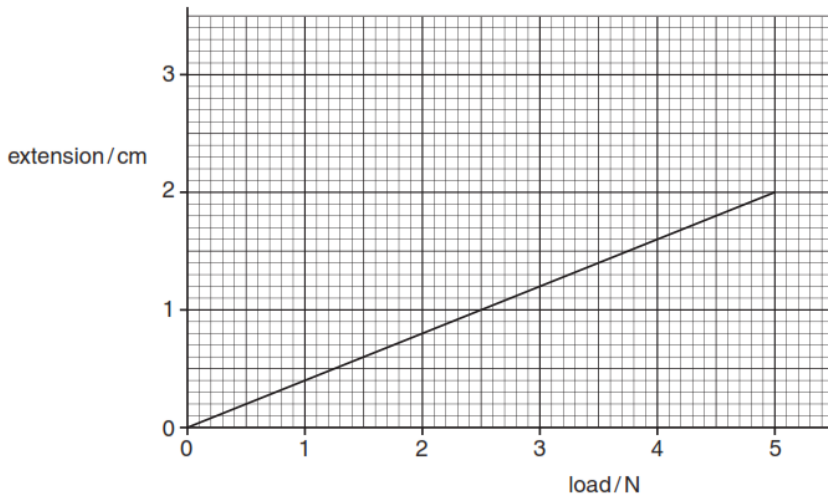
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With no load, the spring is 12.0 cm long. With a load of 2.0 N on the end of the spring, its length is 15.0 cm. Calculate the extension of the spring. (2 marks)

.....

(c) When the graph of extension against load is drawn for the spring, the result is the line shown below.



The unstretched length of the spring is 9.0 cm.

(i) Calculate the total length of the spring when a 5.0 N load is hanging from the spring.

(2 marks)

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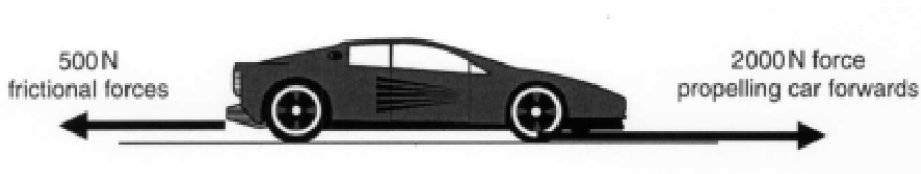
(ii) Calculate the energy stored in the spring when it stretches through 2cm (2 marks)

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.....

(iii) Calculate the spring constant from the graph (3 marks)

.....
.....

18 (a) The car of mass 500kg is travelling on a level road as shown below.



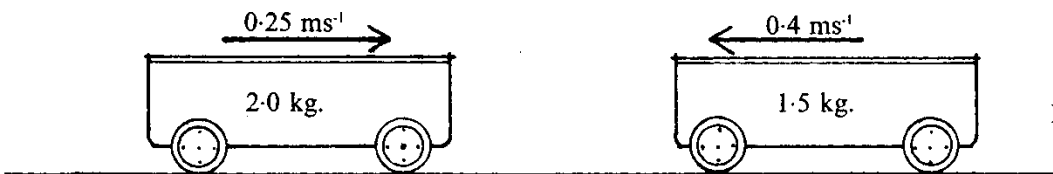
(i) Calculate the magnitude of the resultant force on the car. (2mks)

.....
.....

(ii) Calculate the acceleration of the car. (2 marks)

.....
.....

(b) The figure shows two trolleys of masses 2.0kg and 1.5kg traveling towards each other at 0.25m/s and 0.4m/s. The trolleys combine on collision



(i) Calculate the velocity of the combined trolleys. (4 marks)

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.....
(ii) In what direction do the trolleys move after collision (1mark)

.....
.....
19. (a) What is diffusion? (1 mark)

.....
.....
.....

(b) A smoke cell contains a mixture of trapped air and smoke. The cell is brightly lit and viewed through a microscope. State and explain what is observed. (3 marks)

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(c) A beaker is filled completely with water. A spoon full of common salt is added slowly. The salt dissolves and the water does not overflow.

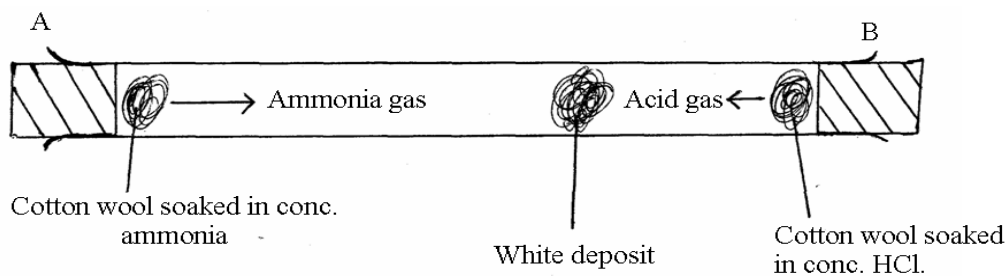
(i) Why is salt added slowly? (2 mark)

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.....
.....

(ii) Why doesn't the water overflow? (2 mark)

.....
.....
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(d) In the figure below, ammonia gas and an acid gas diffuse and react to form a white deposit on the walls of a long glass tube as shown.



(i) What conclusion can be made from the result of this experiment?
(2mark)

.....

(ii) How does the size and mass of a gas affect its rate of diffusion? (2 marks)

.....

(iii) The experiment is performed at a lower temperature. Explain how the time taken to form the white deposit would be affected. (2 marks)

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END TERM ONE, 2020

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232/3

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PHYSICS
PAPER 3
PRACTICAL

TIME: 2 $\frac{1}{4}$ HOURS

INSTRUCTIONS TO CANDIDATES

- lv) Write **your name** and **index number** in the spaces provided
- lvi) Answer **ALL** the questions in the spaces provided in the question paper.
- lvii) You are supposed to spend the first 15 minutes of the 2 $\frac{1}{4}$ hours allowed for this paper reading the whole paper carefully before commencing your work.
- lviii) Marks are given for clear record of observations made, their suitability, accuracy and the use made of them.
- lix) Candidates are advised to record their observations as soon as they are made.
- lx) **Non-programmable** silent electronic calculators and KNEC mathematical table may be used.
- lxi) This paper consists of 7 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

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QUESTION	MAXIMUM SCORE	CANDIDATES SCORE
86.	20	
87.	20	
TOTAL	40	

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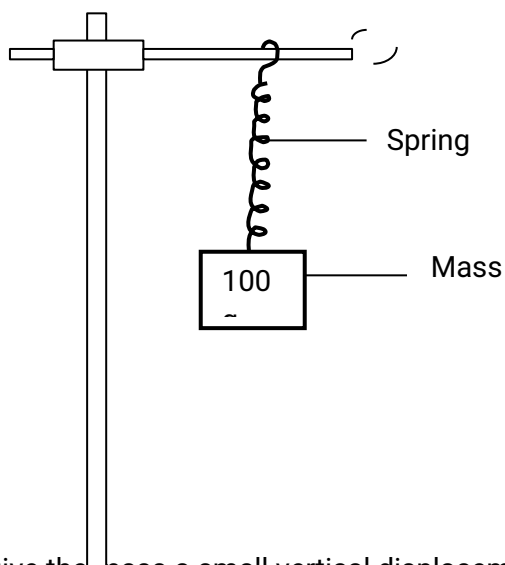
PART A

1. You are provided with the following:

- A retort stand, clamp and boss.
- A spiral spring.
- A stop watch.
- Three 100g masses.
- Three 50g masses.

PROCEDURE

a) Suspend a 100g mass at the end of a spiral spring as shown below.



- b) Now give the mass a small vertical displacement and release so that it performs vertical oscillation.
 c) Time for 20 oscillations and determine the period.
 Enter the result in the table below.
 d) Repeat the experiment for other values of mass given and complete the table.

Mass m(g)	100	150	200	250	300	350
Time for 20 oscillations t (s)						
Period time T (s)						
T ² (S ²)						

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e) Plot a graph of T^2 (S^2) (y -axis) against m (kg).

(5marks)



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f) Determine the slope of the graph.
(2marks)

.....

g) Given that $T^2 = \frac{4\pi^2 m}{k}$ where k is the spring constant, use the graph to obtain the value of the spring constant k . (2marks)

.....

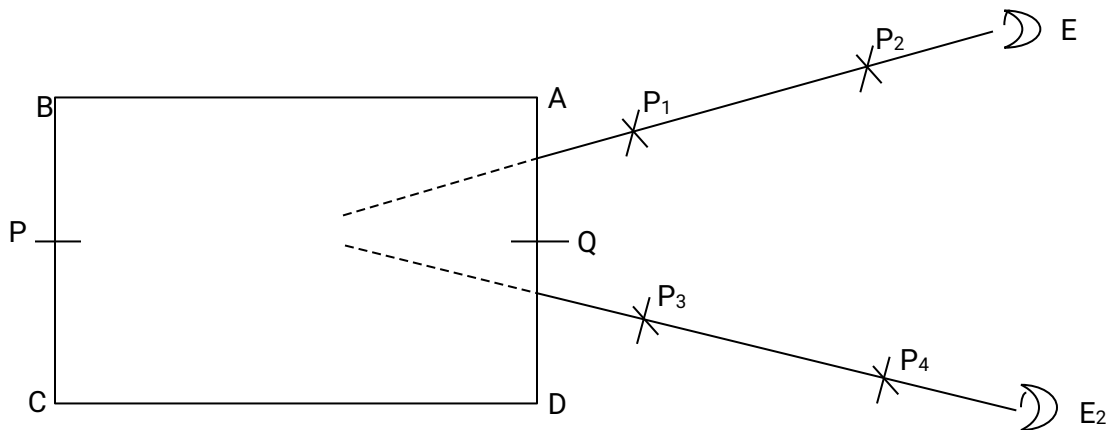
PART B

You are provided with the following

- 5 optical pins
- A rectangular glass block
- A plain paper
- A soft board
- 4 thumb pins

Proceed as follows

- h) Fix the white piece of paper on the soft board using thumb pins. Place the glass block on the white paper and draw the outline of the block.
- i) Remove the glass block and indicate the sides A, B, C and D as shown.



- j) On side BC, determine its center and fix a pin P_0 as shown. Looking from one side at the opposite end of the slab, fix pin P_1 and then pin P_2 so that they are in line with the image I of the pin P_0 . On the other side

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locate the same image using pins P₃ and P₄ as shown above.

- k) Remove the glass block and the pins and produce lines P₁P₂ and P₃P₄ to their points of intersection; (the position of the image I) (1mark)
- l) Determine the midpoint of AD and label it Q. Measure the lengths QP₀ and Q1. (2marks)

QP₀ =cm

Q1 =cm

- m) Work out the ratio $= \frac{QP_0}{Q1} = n$ (1mark)

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- n) What does n represent (1mark)

.....

.....

QUESTION 2

You are provided with the following:-

- am) two retort stands
- an) a metre rule
- ao) some cotton thread (approximately 1.2m long)
- ap) a ball of plasticine
- aq) a stop watch
- ar) a protractor
- as) half metre rule

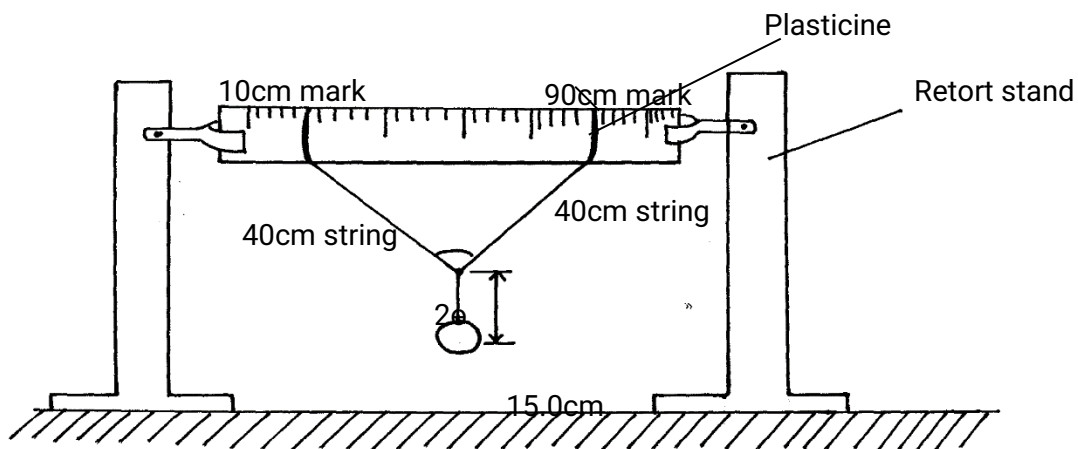
Proceed as follows:

- aj) (i) Attach one end of a string to the metre rule at 10cm by fastening a loop of string tightly round the metre rule. Fix the string at this point with a small piece of plasticine. Tie the other end of the string

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around the metre rule at the 90cm mark. Fix this loop with another small piece of plasticine.

ii) Attach the pendulum bob to the centre of the string so that the centre of gravity of the bob is 15.0cm below the point of suspension (see figure below)



marks: refix the pasticine

measure the angle 2θ and period T , as before.

(iv) Repeat (ii) above with the loops at 15cm and 85cm, 20cm and 80cm, 25cm and 75cm , 30cm and 70cm, 35cm and 65cm

(v) Enter all your results in the table below: (7mks)

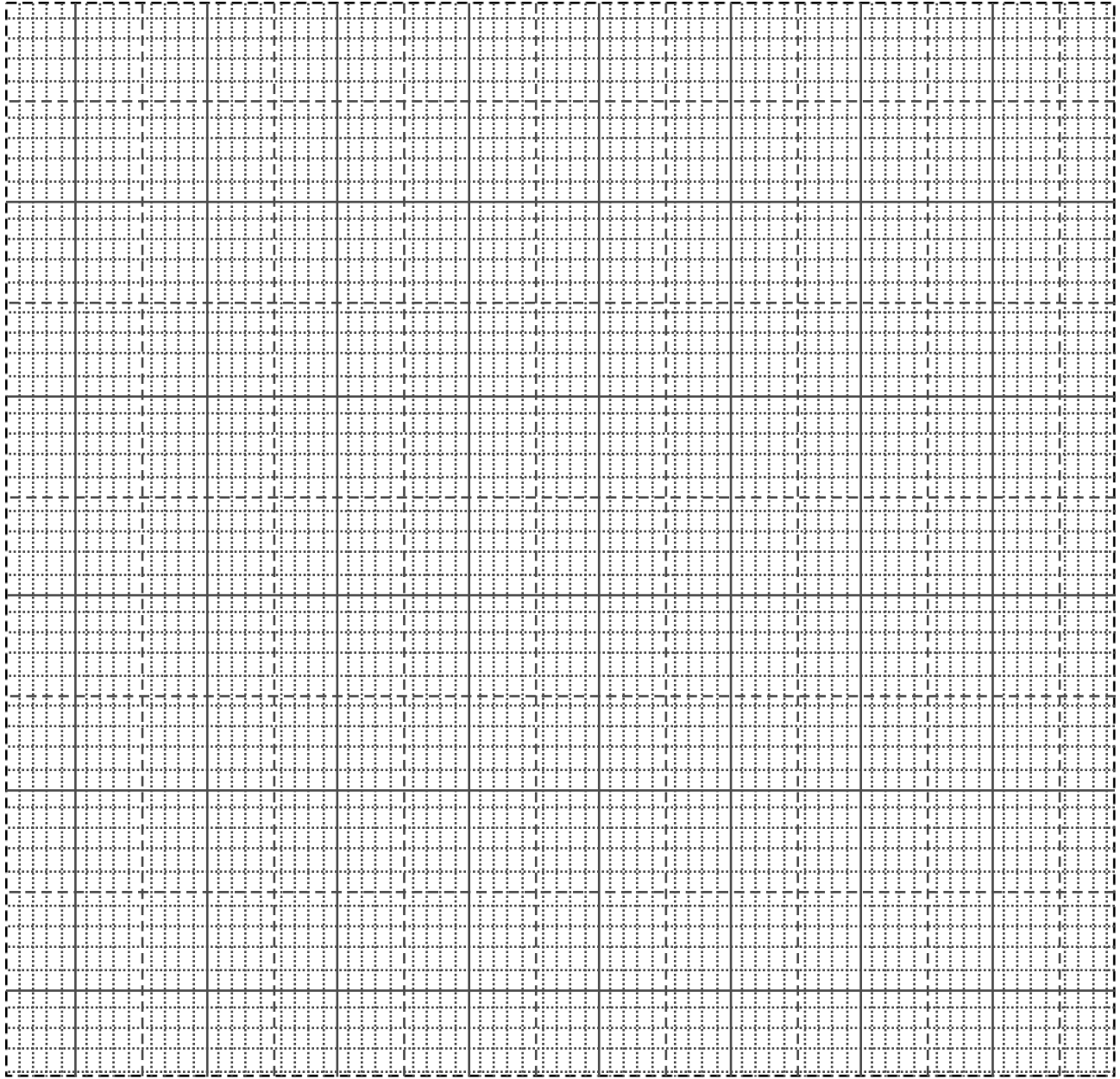
Position of loop	2θ	$\text{Cos } \theta$	Time , t for 10 oscillations	Period, T (sec)	$T^2(\text{S}^2)$
10cm and 90cm					
12cm and 88cm					
15cm and 85cm					
20cm and 80cm					

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25cm and 75cm					
30cm and 70cm					
35 cm and 65cm					

(c) (i) On the grid provided plot a graph of T^2 (y-axis) against $\text{Cos}\theta$ (5mks)



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(ii) Find the intercept on the T^2 -axis (1mk)

(iii) Determine the slope of your graph (2mks)

(i) Measure the angle 2θ

.....

(ii) Pull the pendulum towards you through a small distance, releases it and measure the period, T for motion by timing 10 complete oscillations

(iii) Remove the pasticine slide the loops to the 12cm and 88cm

(d) (i) Measure the length, L , of the pendulum when $2\theta = 0^\circ$ in metres (1mk)

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(ii) From your graph, determine the period **T** of the pendulum when $2\theta = 0^\circ$ (2mks)

(iii) Using the formula $T = 2\pi\sqrt{l/g}$ determine the value of 'g' given that $T = 2.0$ (2mks)

**FORM 3 JOINT EXAMINATION 2020
PHYSICS 232/3**

PHYSICS CONFIDENTIAL

QUESTION 1

Each candidate will require the following

- A retort stand, clamp and boss
- A spiral spring ($k = 10 \text{ N/m}$)
- A stop watch
- Three 100g masses
- Three 50g masses
- 5 optical pins
- A rectangular glass block (100x 60x 18 mm)
- A white plain paper
- A soft board
- 4 thumb pins

QUESTION 2

1

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Each candidate should be provided with

lxii) two retort stands

lxiii) a metre rule

lxiv) some cotton thread (approximately 1.2m long)

lxv) a ball of plasticine

lxvi) a stop watch

lxvii) a protractor

lxviii) half metre rule

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2. KCSE pastpapers accompanied with their marking schemes (from 1995-2019) accompanied with their marking schemes
3. All revision materials
4. All high school which are teacher/student friendly notes
5. All KASNEB NOTES (Updated)
6. All schemes of work (primary to secondary)

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