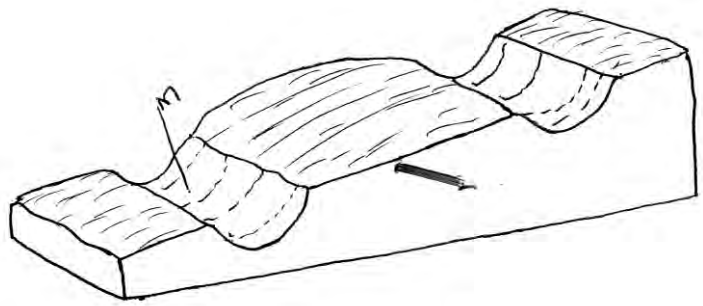
KIRINYAGA WEST
443/1
AGRICULTURE
PAPER I

SECTION A (30MARKS)
Answer ALL the question in this section in the spaces provided

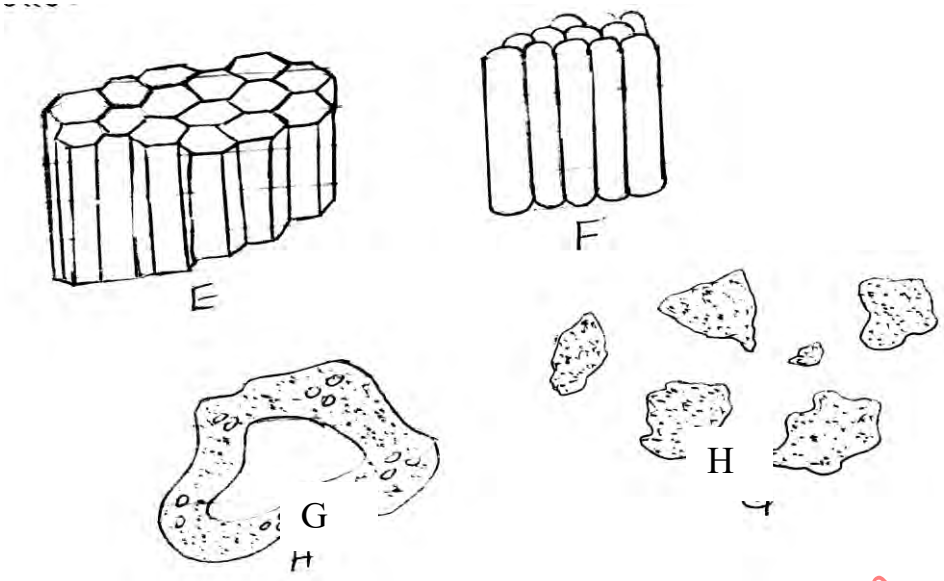
1. List **four** branches of Agriculture (2mks)
2. State **three** characteristics of shifting cultivation (1 ½ mks)
3. Give **two** forms of collective land tenure system in Kenya (1mk)
4. State **four** factors to be considered before deciding on irrigation in crop production (2mks)
5. State **two** causes of hard pans in a crop field (1mk)
6. Outline **four** advantages of undersowing in pasture production (2mks)
7. Give **four** ways of controlling weeds in a field of maize (2mks)
8. Define the following terms
   (a) Economic injury level. (1mk)
   (b) Integrated pest management. (1mk)
9. Name **four** effects of applying nitrogenous fertilizers in access to crop growth (2mks)
10. State **three** ways by which overheating can be prevented in the process of making silage. (1½ mk)
11. Name the disease which causes a mass of dark spores on the flowering parts of maize? (1mk)
12. Differentiate between budding and grafting (2mks)
13. State **four** ways of improving the labour productivity of farm (2mks)
14. Give a reason for each of the following practices
    (a) Top dressing established crops .(1mk)
    (b) Topping in pasture management.(1mk)
    (c) Stooking in maize production. (1mk)
15. State **four** factors that determine the stage at which a grain crop is ready for harvesting (2mks)
16. Give **two** fresh market varieties of carrots (1mk)
17. State four characteristics that make a crop suitable for green manuring (2mks)

SECTION B (20Mks)
Answer all questions in this section

18. (a) Define the term straight fertilizer (1mk)
    A farmer was advised to apply 400kg of a complete compound fertilizer whose fertilizer grade is 25:20:5
    (i) Calculate the amount of K20 that was applied by the farmer (2mks)
    (ii) What do figures 25:20:5 stand for (3mks)
    (iii) The active ingredients in a compound fertilizer adds up to 50kgs for every 100kg of fertilizer . Account for the remaining mass (1mk)
19. The diagram below is a type of a terrace



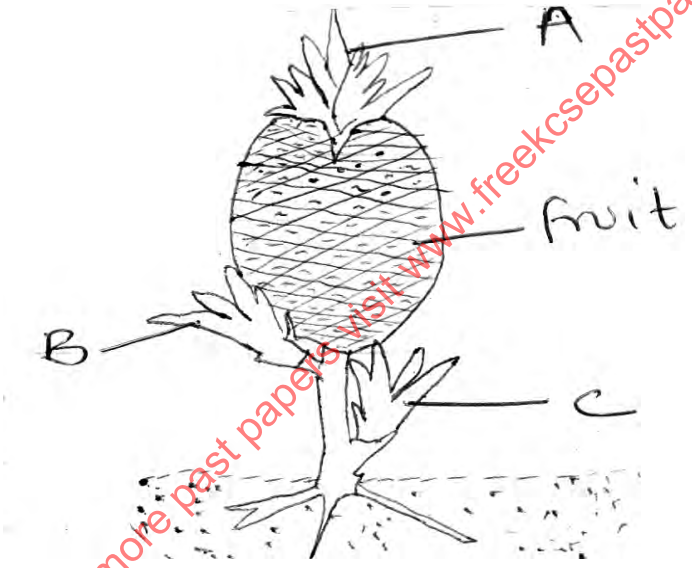
    (a) Name the type of terrace illustrated above (1mk)
    (b) Give the name of the part labeled M in the diagram (1mk)
    (c) Apart from the above named structure state any other **four** type of terraces (4mks)
20. The diagram labeled E,F,G and H , illustrate some soil structures . Study the diagram carefully and answer the questions that follows –



(a) Name the soil structures E,F,G and H (2mks)

(b) State **four** field practices which can destroy the soil structures (2mks)

21. The diagram below illustrates a pineapple crop. Study it and answer the questions that follow: -



(a) Name the parts labeled A and B (2mks)

(b) Give **two** reasons why part C is the most preferred by farmers for propagating pineapples (1mk)

SECTION C (40 MARKS)

Answer any TWO questions in this section in the spaces provided after question 24

22. (a) Describe production of Napier grass under the following sub-heading
    (i) Variaties (2mks)
    (ii) Land preparation (4mks)
    (iii) Planting (2mks)
    (iv) Harvesting (2mks)
    (b) Explain the importance of Agroforestry trees (5mks)
    (c) State **five** factors considered when designing a crop rotation programme (5mks)

23.(a) A farmer has 160ha of land, 60ha of which is under wheat, 32 ha under maize, 12ha under fodder crops and the rest under pastures. The farmer wishes to know whether replacing 12ha of maize with irish potatoes the following year would be worthwhile. The fertilizer would have to be increased from 5 bags per hectare per hectare for maize to 7 bags per hectare for irish potatoes and an extra 100 man – days of casual labour per hectare will be necessary as a result of the change. The average yield of maize and irish potatoes is 45 and 115

bags per hectare respectively. The prices are Ksh. 1,400 per bag for maize and Ksh . 1,200 per bag for irish potatoes, seed costs are Ksh. 2,500 per hectare for maize and Kshs 30,000 per hectare for irish potatoes fertilizer costs are Kshs 1,300 per bag . Labour is paid to Ksh. 150 per man-day/ha . Prepare a partial budget and indicate whether the change is worthwhile (12mks)

(b) State **eight** factors of Land Fragmentation in Kenya (8mks)

24. (a) Discuss the various structural measures used to conserve soil and water in the farm (10mks)

(b) Explain **five** reasons for carrying out minimum tillage (5mks)

(c) Outline **five** benefits of tissue culture in crop propagation (5mks)

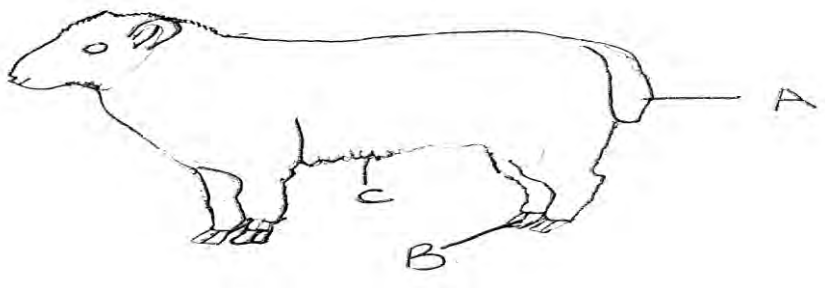
443/2
AGRICULTURE
PAPER 2
JULY/AUGUST
TIME : 2 HOURS

SECTION A (30 MARKS)
Answer ALL questions in this section in the space provided

1. Give **three** maintenance practices carried out on crosscut saw (1 ½ mks)
2. Mention **four** characteristics of exotic breeds of cattle (2mks)
3. Name **one** mineral deficiency as a result of each of the following symptoms
   (a) Soft shelled eggs ……..... (½ mk)
   (b) Pica..... (½ mk)
   (c) Grass tetany /staggers ..... (½ mk)
   (d) Paraketosis ..... (½ mk)
4. Name the infective stage of each of the following internal parasite
   (a) Liverfluke . ..... (½ mk)
   (b) Tapeworm ..... (½ mk)
5. Differentiate between a roughage and a concentrate in livestock nutrition (2mks)
6. State **four** reasons for steaming up in dairy cattle management (2mks)
7. State **three** male characteristics that a cock loses after caponization (1½mks)
8. Outline **three** advantages of using concrete in construction of farm structures (1½mks)
9. What do you understand by the term incubation period as used in livestock diseases (1mk)
10. Mention **four** ways in which stress can be avoided in a flock of layers (2mks)
11. Give **four** sources of farm power that are environmentally friendly (2mks)
12. Name **three** marketing channels that market Beef products in Kenya (1 ½ mk)
13. State **two** morphological differences between Bactrian and dromedary camel breed (2mks)
14. Give the function of the following parts of a petrol engine system
   (a) Connecting rod ..... (½ mk)
   (b) Carburretor ..... (½ mk)
   (c) Thermostat ..... (½ mk)
   (d) Piston rings ..... (½ mk)
   (e) Radiator ..... (½ mk)
15. Explain how each of the following factors can be applied in the control of livestock disease
   (a) Quarantine ..... (1mk)
   (b) Proper selection and breeding ..... (1mk)
16. Outline **four** effects of liverflukes on sheep (2mks)
17. Highlight **three** disadvantages of inbreeding (1 ½ mks)

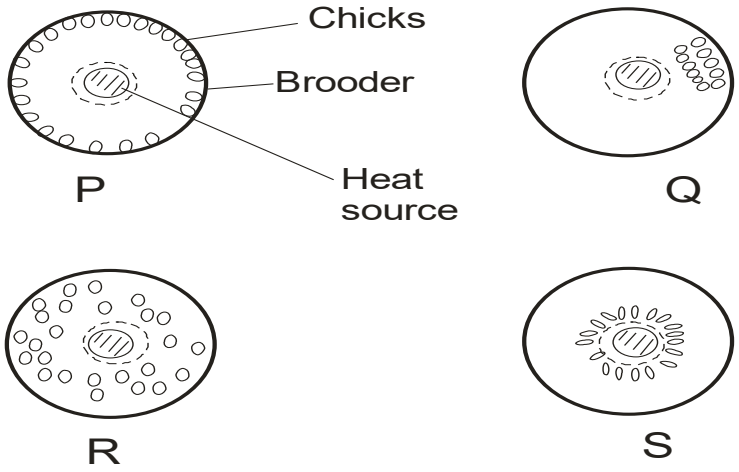
SECTION B (20mks)
Answer all the questions in this section

18. A farmer wants to prepare 500kg of calf rearing ration containing 22% DCP using rice bran (10%DCP) and simsim seedcake (35% DCP) .How much of each feedstuff should the farmer purchase to prepare the ration (show your working) (5mks)
19. The diagram below illustrates livestock rearing practices. Study it carefully and answer the questions that follow:-



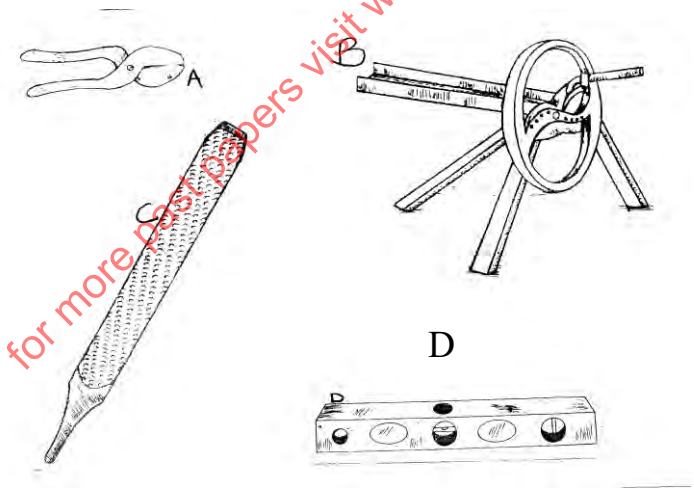
(a) Identify the operation carried out on the part labeled A (1 mk)
(b) Give **two** reasons for carrying out the operation identified in (a) above (2mks
(c) Mention **one** problem that would occur if the operation that should be carried out on part labeled B is not carried out (1mk)
(d) State **two** precautions that should be observed when shearing wool on part labeled C (2mks)

20. The diagrams below illustrate behavior of chicks in a brooder



(a) Describe the behavior of chicks in brooders labeled Q, R and S (3mks)
(b Mention **two** other observable behaviour in chicks in brooder labeled P other than the behavior shown above (2mks)

21 The illustrations below represent farm tools/equipment. Study them carefully then answer the questions that follow



(a) Identify tools/equipment labeled C and D (2mks)
(b) State the use of tool A (1mk)
(c) In which category of farm tools and equipment does not tool belong? (1mk)

SECTION C (40 MARKS)

Answer any two questions in this section in the spaces provided after question 24

22. (a) Describe **six** operational differences between mould board plough and a disc plough (6mks)
(b) Outline the procedure for harvesting honey from Kenya Top bar line (10mks)
(c) State **four** ways of stimulating a cow for milklet down (4mks)

23. (a) Discuss bloat disease under the following subheadings
    (i) Causes (3mks)
    (ii) Symptoms (3mks)
    (iii) Control Measures (4mks)
    (b) Describe **five** signs of good health in livestock (10mks)
24 (a) Describe the feeding practices carried out on a calf from birth to weaning (10mk
    (b) Mention **four** factors affecting maintenance requirements in livestock nutrition (4mks)
    (c) Describing **six** factors to consider when siting farm structures (6mks)

EMBU CLUSTER
443/1
AGRICULTURE
Paper 1

SECTION A (30 marks)
Answer ALL questions in this section on the spaces provided.

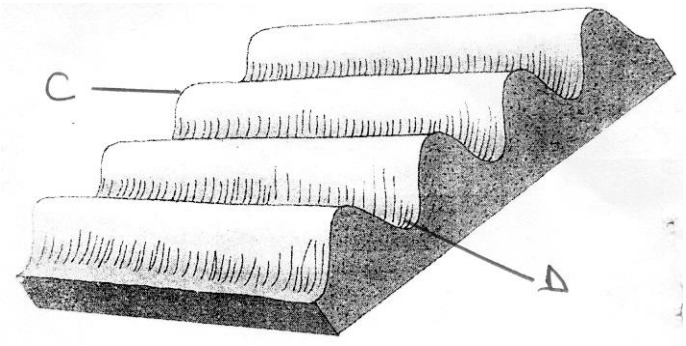
1. State four ways by which plant nutrients are lost. (2 marks)
2. Explain the meaning of the term production function. (1 mark)
3. Name four product relationships in Agriculture. (2 marks)
4. State four uses of a green house in a farm. (2 marks)
5. Name four farming practices farmers can use to achieve minimum tillage. (2 marks)
6. Outline four importance of mulching in Agricultural land. (2 marks)
7. Name four sources of Agricultural credit. (2 marks)
8. Give four ways of harvesting water in the farm. (2 marks)
9. Name the form in which the following nutrients are absorbed by plants. (2 marks)
   i) Nitrogen .....
   ii) Phosphorus .....
   iii) Sulphur .....
   iv) Calcium .....
10. State four sites Agroforestry trees can be planted in the farm. (2 marks)
11. Outline four factors affecting the efficiency of pesticides. (2 marks)
12. Name a crop that require the following training.
    a. Propping ..... (½ marks)
    b. Threlishing ..... (½ marks)
    c. Staking..... (½ marks)
13. List four sources of organic matter in the soil. (2 marks)
14. Give advantages of tissue culture. (2 marks)
15. Outline four factors that influence the supply of casual labour on the farm. (2 marks)
16. State three properties of soil that are influenced by its texture. (1½ marks)

SECTION B
Answer all questions in the spaces provided.

17. Below are weeds. Study them and carefully answer the questions that follow.

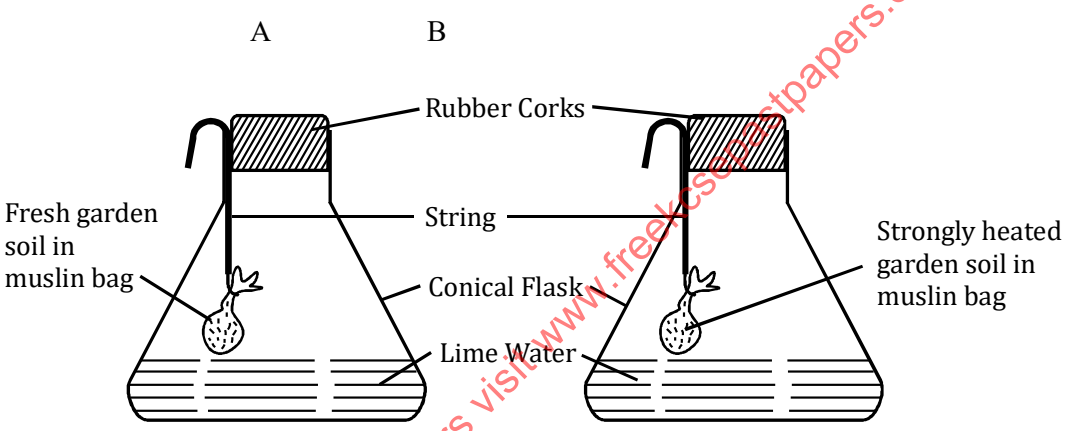
Identify weeds labeled S,T,U and P. (4 marks)

18. The figure below illustrates a tertiary operation. Study it and answer the question that follow.



a. Identify the tertiary operation illustrated above. (1 mark)
b. Name the part labeled C and D. (2 marks)
c. Name two other tertiary operations that can be carried out in the farm apart from the one shown above. (2 marks)

19. A form one student set up experiment as shown below to study an aspect of soil. The set up was left for six hours. Study it and answer the questions that follow.



a. What was the aim of the experiment? (1 mark)
b. State two observation that was made in each of the flask C and D. (2 marks)
c. Why was the soil in flask D strongly heated? (1 mark)
d. Outline ways in which soil living organisms affect Agricultural production. (2 marks)

20. The table below shows the population and gross domestic products of countries A and B.

Country	Gross Domestic product (millions)	Population (millions)
A	1800	36
B	1200	15

a. Calculate the Per Capita income for each country. Show your working. (2 marks)
b. Which of the following two countries is more developed economically. (½ mark)
c. How can Agriculture increase the gross Domestic product of a country. (½ mark)

SECTION C **40 marks)**

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

21. Describe production of dry beans under the following subheading.
    a. Land preparation. (5 marks)
    b. Planting (7 marks)
    c. Harvesting (3 marks)
    d. Outline any five post harvesting practices carried out on beans after harvesting. (5 marks)
22. a. Outline various ways through which vegetation cover reduces soil erosion. (4 marks)
    b. Outline various conditions which necessitate land cleaving. (4 marks)
    c. Outline various advantages of land consolidation. (6 marks)
    d. Give six benefits of planting annual crops early. (6 marks)
23. The following table shows production of maize using various levels of input.

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Units of variable input (man days)	Total output	Marginal product	Average product
0	0	-	-
1	6	-	-
2	18	-	-
3	33	-	-
4	40	-	-
5	45	-	-
6	48	-	-
7	48	-	-
8	40	-	-

    a. Work out the marginal product and the average product and fill in the table. (9 marks)
    b. On a graph paper, plot graphs showing total output marginal product and average product against the variable input. (8 marks)
    c. On the graph, draw lines to show the following zones of production. (3 marks)
        i) Increasing returns production function.
        ii) Decreasing returns production function.
        iii) Diminishing return zone.

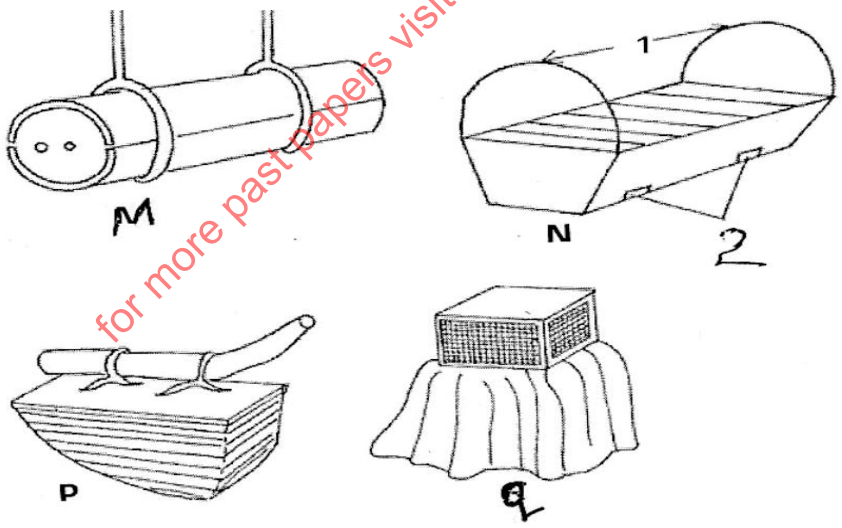
July/August 2018
Time 2 hours

SECTION A (30 marks)
Answer ALL questions in this section on the spaces provided.

1. Name the tool or equipment that is complementary in use with : (2 marks)
   i) Canula
   ii) Elastrator
   iii) Lead stick
   iv) Cold chisel
2. List four factors considered when formulating livestock rations. (2 marks)
3. State six methods a farmer can use to control livestock diseases. (3 marks)
4. State four advantages of using corrugated iron sheets for roofing instead of asbestos (2 marks)
5. State four practices through which a farmer would ensure that no engine knock occurs in a tractor. (2 marks)
6. State four practices that a farmer should carry out to reduce egg eating in poultry house. (2 marks)
7. State four advantages of carrying out raddling in sheep management. (2 marks)
8. Outline four importance of additives in livestock feeds. (2 marks)
9. Give four control measures of milk fever. (2 marks)
10. Give four characteristics of a heavy poultry breeds. (2 marks)
11. Give four reasons why tilapia fish is commonly reared in Kenya farm ponds. (2 marks)
12. Give four reasons for seasoning timber before use. (2 marks)
13. Give four factors which affects digestibility. (2 marks)
14. Outline four control measures of liver fluke. (2 marks)
15. Differentiate between mothering ability and prolificacy. (1 mark)

SECTION B (20 MARKS)
Answer all the questions in this section in the spaces provided.

16. Diagram M, N, P and Q shows some structures used in a apiculture. Use them to answer the questions that follow.

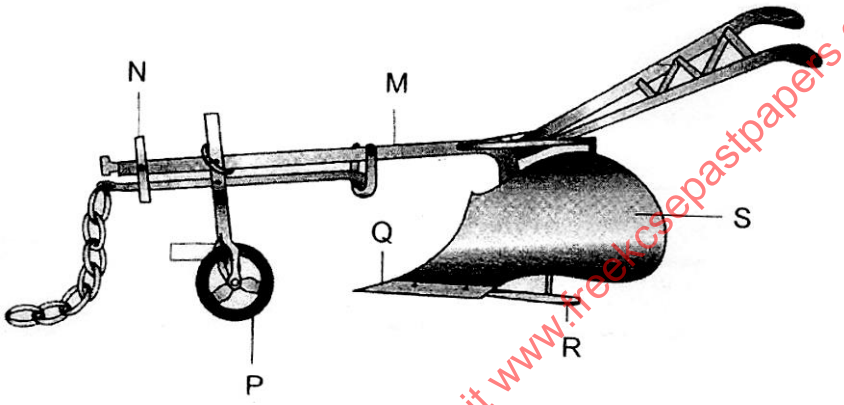


   a. Identify the structure labeled M, N, P, Q. (2 marks)
   b. State the use of equipment P and Q. (2 marks)
   c. State one advantage structure N has over structure M. (1 mark)
   d. State the use of the parts labeled 1 and 2 on structure N. (2 marks)

17. The diagram below illustrates a cross section of a cow's udder. Study it carefully and answer the questions that follow.

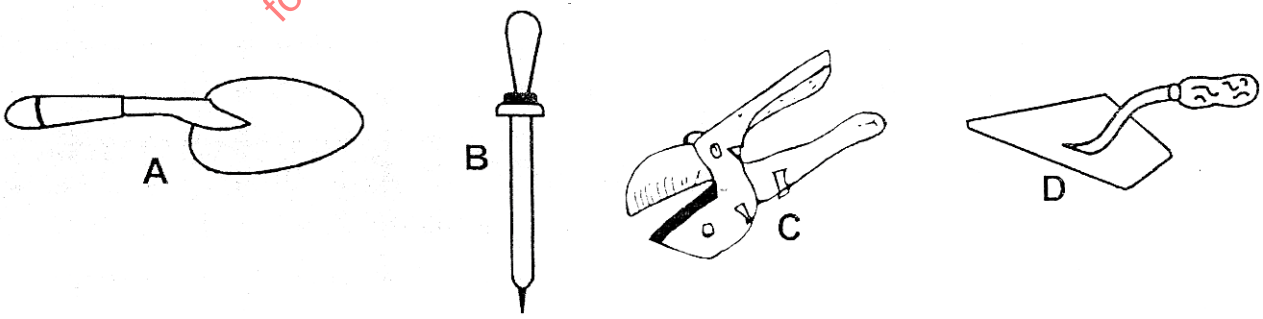
a. Identify the parts labeled: (2 marks)
b. Name two hormones that control milk let down in a cow. (1 mark)

18. Below is an illustration of a farm implements. Study it carefully and answer the questions that follow.



a. Identify the farm implements. (1 mark)
b. Name the parts labeled N, P,Q, R and S. (5 marks)
c. Give the function labeled P and S. (2 marks)

19. Study the diagrams below and answer the questions that follows.



Identify tools A, B, C and D. (2 marks)

SECTION C (40 MARKS)

Answer two questions in this section on the spaces provided after question 22.

20. a. Explain the operational differences between disc plough and mould board plough. (12 marks)

b. Outline 8 microbial activities that take place in the rumen (8 marks)

21. a. Describe the characteristics which eggs for incubation should posses. (6 marks)
    b. Outline various methods used to control cannibalism in poultry management. (8 marks)
    c. Outline 6 advantages of artificial calf rearing. (6 marks)

22. i. Discuss fish farming in a fish pond under the following sub headings.
    a. Stocking the pond (4 marks)
    b. Feeding the fish (4 marks)
    c. Harvesting fish (4 marks)
    d. Maintenance of the pond. (4 marks)
    i. Outline precaution observed when using tools and equipment. (4 marks)

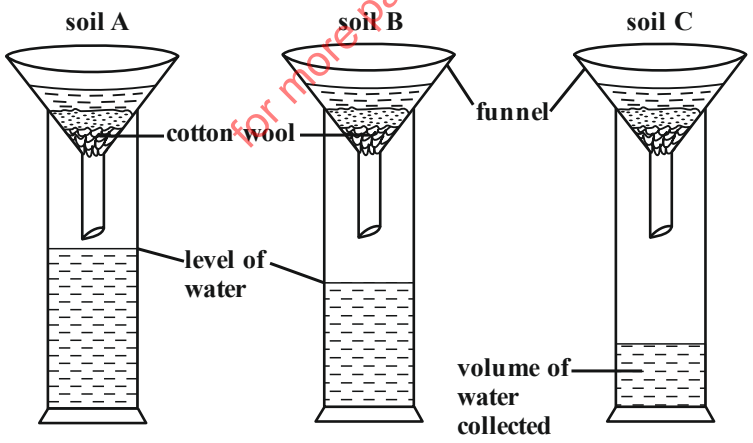
MERU CLUSTER
443/1
AGRICULTURE
Paper 1
Term 2 2018

SECTION A (30 marks)
Answer ALL the questions in this section in the spaces provided.

1. Define the following terms as used in the study of Agriculture.
   i) Pastoralism (1 mark)
   ii) Pisci-culture. (1 mark)
2. a) Give four advantages of using certified seeds in crop production. (2 marks)
   b) List TWO methods through which seeds dormancy may be broken (1 mark)
3. List two problems associated with land fragmentation. (1 mark)
4. State three Government policies that regulates the amount of imported Agricultural goods (1½ marks)
5. State three reasons why subsoiling is important (1½ marks)
6. Outline FOUR benefits of being a member of dairy co-operative society. (2 marks)
7. List down FOUR ways in which the Government may use to help the farmer to adjust to risk and uncertainties. (2 marks)
8. Outline four factors which affect herbicides selectivity. (2 marks)
9. a) Maize requires 120kg/ha of phosphate pentoxide (P_2O_5). How much of compound fertiliser 20:20:10 would be applied to 0.4 hectares of land to achieve this rate. (2 marks)
   b) Name the disease that causes a mass of dark spores on the flowering part of maize. (1 mark)
10. Differentiate between integrated pest management and Economic injury level. (1 mark)
11. State four ways by which afforestation help in land reclamation. (2 marks)
12. Give four ways in which labour on farm can be improved. (2 marks)
13. Name two methods that can be used to reclaim arid and semi-arid areas. (2 marks)
14. State four factors that may determine the number of cultivation when preparing a seedbed. (2 marks)
15. Distinguish between oversowing and undersowing. (2 marks)
16. State two factors considered when sorting tomato fruits before grading them. (1 mark)

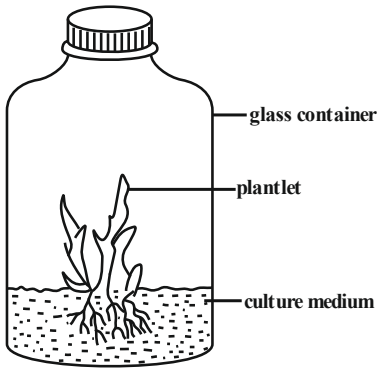
SECTION B (20 marks)

17. The diagram below shows a set up to investigate a certain soil phenomenon. Use it to answer the questions that follow. Equal volume of water was poured in each of soils A, B, and C in the funnel.



   a) After 20 minutes the water levels were as shown. Give the possible identity of soils type A, B and C. (1½ marks)
   b) What soil phenomenon as set up aimed to investigate. (1 mark)
   c) Which of the three soils named in (a) above is most appropriate for fish farming. (½ mark)

18. The diagram below illustrates a method of crop propagation. Study it and answer the questions that follow.



a) Identify the method of propagation illustrated above. (1 mark)
b) Name a crop that can be propagated using this method. (1 mark)
c) State two advantages of using this method in crop propagation. (2 marks)

19. a) A farmer has four plots P1, P2, P3 and P4 as shown in the diagrams below. Each of the plots has an agronomic problem as indicated.

P1	P2	P3	P4
Infested with bacterial wilt	Deficient in nitrogen	Infested with witch weed (Striga spp)	Prone to soil erosion

The farmer intends to grow maize, Irish potatoes, peas and Rhodes grass. Plan a rotation programme for the first year of the rotation system

Crop	Plot
Rhodes grass	.....
Irish potatoes	.....
Peas	.....
Maize	.....

b) Different soil samples were tested and their values tabulated as shown below.

Sample	pH value
P1	4
P2	5
P3	6
P4	7
P5	8
P6	9
P7	10
P8	11

i) Which soil sample had the highest acidity. (1 mark)
ii) Which soil is suitable for growing coffee. (1 mark)
iii) How would the pH value of soil sample P1 be increased. (1 mark)

20. Below is an illustration of weed. Study it and answer questions that follow.

a) Identify the weed. (1 mark)
b) Why is it difficult to control the weed above? (1 mark)
c) State four effects of the above weed to crops. (2 marks)

21. 20 bags of potatoes were demanded when the price was Kshs 1,000. When the price was changed to Kshs 800, only 22 bags were demanded.
i) Calculate the elasticity of demand. (4 marks)

SECTION C (40 MARKS)
Answer any TWO questions in the spaces provided.

22. a) A farmer is considering to undertake production of either cotton or tea. Study the following information about the two crops then answer the questions that follow.

	Cotton
Yield per hectare	2500kg
Price	Kshs 10 per kg
Labour requirement per ha	100 man days
Cost of labour	Kshs 25 per man-day

Cost of seeds	Kshs 100 per ha
Cost of T.S.P fertilizer	Kshs 2000 per ha
Cost of S.A. fertilizer	Kshs 1500 per ha
Cost of sprays	kshs 500 per ha

TEA

Yield per hectare	2000kg
Price	Kshs 12 per kg
Labour requirement per ha	50 man days
Cost of labour	Kshs 25 per man-day
Cost of ssp	Kshs 1500 per ha
Cost of seeds	kshs 100 per ha
Cost of sprays	Kshs 200 per ha

i) Calculate the gross margin for each crop. From your calculation which crop should the farmer grow. (7 marks)

ii) Apart from gross margin explain other factors a farmer should consider when deciding on the crop to grow, (7 marks)

b) Give five functions of farmer's co-operative societies. (6 marks)

23. a) Explain various cultural practices that control weeds. (10 marks)

b) List six factors that influence the efficiency of herbicides. (6 marks)

c) State ways by which soil loses fertility. (4 marks)

24.a) Describe the establishment and management of grass pasture to the time it is ready for grazing under the following sub-headings.

i) land preparation. (5 marks)

ii) pasture establishment. (6 marks)

iii) Field management practices. (4 marks)

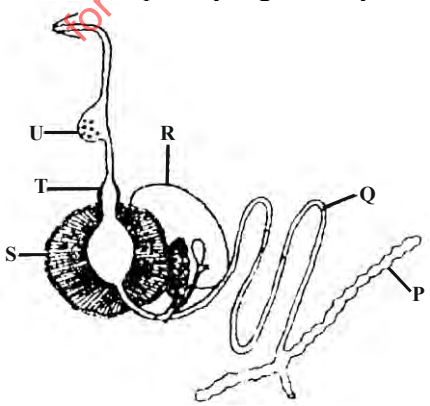
b) Outline the various methods of harvesting crops. (5 marks)

443/2
AGRICULTURE
Paper 2
Term 2 2018
Time 2 hours

SECTION A (30 marks)
Answer ALL the questions in this section in the spaces provided.

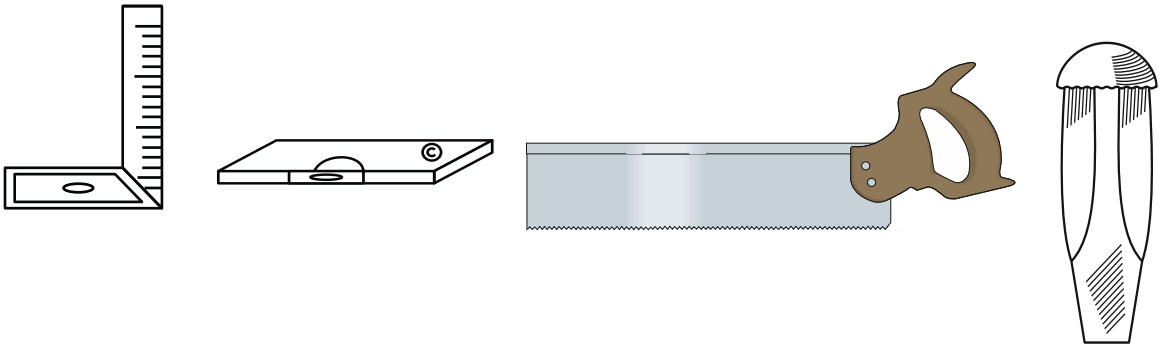
1. Give three reasons why farm tools and equipment should be well maintained. (1½ marks)
2. Give the breeding system involved in each of the following cases: (1 mark)
   a) Friesian sire mated with Ayrshire ram
   b) Friesian sire (father) mated with Friesian ram (daughter)
3. State two factors that stimulate milk let-down in dairy cows. (1 mark)
4. State four harmful effects of ticks on livestock. (2 marks)
5. State any four characteristics of a landrace breed of pigs. (2 marks)
6. State three advantages of raddling in sheep management. (1½ marks)
7. Give two reasons why Teaser rams are introduced to a flock of ewes some weeks before tupping. (2 marks)
8. Give four factors that determine siting of a farm structure. (2 marks)
9. Give four limitations of human power in the farm. (2 marks)
10. State four signs of broodiness in poultry. (2 marks)
11. Write down two reasons that lead to laying of small eggs in chicken. (2 marks)
12. Describe four physical characteristics of a good heifer for breeding. (2 marks)
13. A farmer had a cow that was found dead in a shed. Upon opening the carcass there were signs of helminthiasis. Write down two of these signs. (2 marks)
14. Define the following terms as used in livestock production. (2 marks)
    a) farrowing.....
    b) hybrid vigour .....
    c) steer .....
    d) gilt .....
15. a) State two conditions of a breeding that may lead to its culling. (1 mark)
    b) Define breech presentation as used in livestock production. (1 mark)
16. List four factors associated to the animal that determine the amount of feeds that an animal consumes. (2 marks)
17. Name a hormone that inhibit with let-down (1 mark)

SECTION B (20 marks)
ALL **QUESTIONS**
18. Study the diagram below of poultry digestive system and answer the questions below.



a) Name the parts labelled P, Q, R, S, T and U. (3 marks)
b) State one function of the parts labelled P and S. (2 marks)

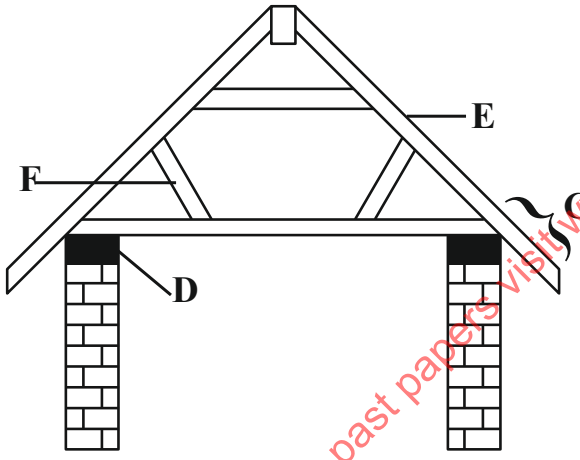
19. Study the diagrams below labelled P, Q, R and S representing some workshop tools and then answer the questions that follow.



P Q R S

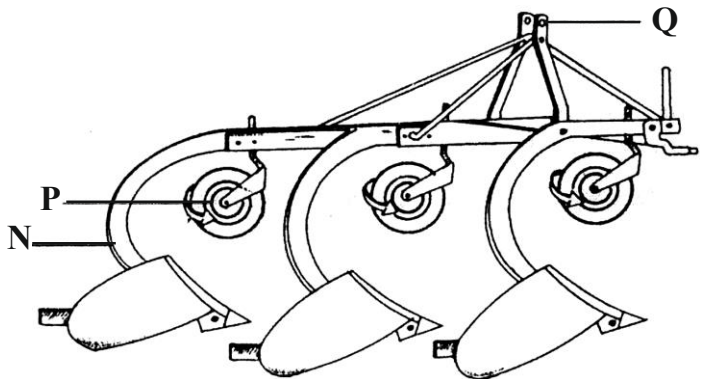
a) Identify the tools. (2 marks)
b) Give one use of tools P and R in the construction of the wooden feed trough. (1 mark)
c) How would the tool labelled Q be used in the construction of a calf pen. (½ mark)
d) Give two maintenance practices carried out on tool S. (1 mark)

20. Study the illustration of a farm structure below and answer the questions that follow.



a) Name the parts labelled C, D, E and F. (2 marks)
b) State the functions of the parts labelled C, D, E and F. (2 marks)
c) Name two chemical preservatives used to treat the wooden part of a structure against insects and fungal damage. (1 mark)

21. Study the diagram below of a mouldboard plough.



a) Identify the parts labelled N and Q. (2 marks)
b) State two functions of part P. (2 marks)
c) On the diagram above, mark using letter R the part that helps to avoid side thrust of the plough. (1 mark)

SECTION C (40 marks)
Answer any TWO questions in the section in the spaces provided.

22. a) With the use of examples, briefly describe the signs of parasites attack on livestock. (10 marks)
b) Explain any five predisposing factors in livestock diseases. (10 marks)
23. a) State five factors to consider in selecting a construction material. (5 marks)
b) What is the importance of farm buildings. (5 marks)
c) Describe the management practices on a tractor. (10 marks)
24. Describe management of young ewes from weaning to lambing. (20 marks)

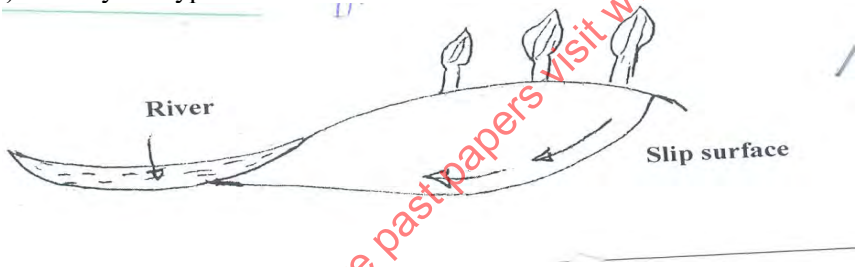
GATANGA
443/1
AGRICULTURE
FORM 4

SECTION A (30 MKS)
Answer All questions in this Section in the spaces provided.

1. Give two factors which charactize small scale farming (1 mk)
2. Name the part harvested for each of the following crops
   a) Onions (½ mk)
   b) Coffee (½ mk)
   c) Carrots (½ mks)
3. State four methods of treating water for domestic for domestic use (2 mks)
4. Name two methods of weed control in pastures (1 mk)
5. Give four disadvantages of using organic manure (2 mks)
6. State four effects of high temperature on crop production (2 mks)
7. Give four objectives of land settlement and resettlement in Kenya (2 mks)
8. Give four farming practices that may help in achieving minimum tillage. (2mks)
9. Give three benefits of conserving forage (3 mks)
10. State three advantage of shifting cultivation (1 ½ mk)
11. Give four factors affecting the efficiency of pesticides (2mks)
12. Give four advantages of practicing crop rotation in the farm (2mks)
14. State four ways in which burning of vegetation may lead to loss of soil fertility (2mks)
15. State four factors that contribute to the competitive ability of weeds (2 mks)
16. Give two factors that would determine the stage at which a crop is harvested (1mk)
17. State two reasons which necessitate pruning of tomatoes (1 mk)

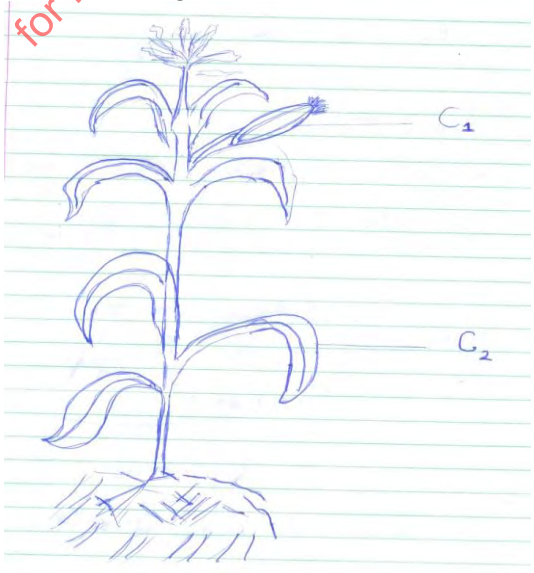
SECTION B – 20 MKS
Answer All the Questions in the spaces provided.

18. a) Identify the type of erosion below (1 mk)



   b) Name four agents of soil erosion (4 mks)

19. Study the crop illustrated in the diagram below and answer the Questions that follows.



a) Name two insect pests which attack the part labelled C_1 and one disease which attack the part labelled C_2 (3mks)

b) State two methods of controlling the disease that affect part labelled C_2. (2mks)

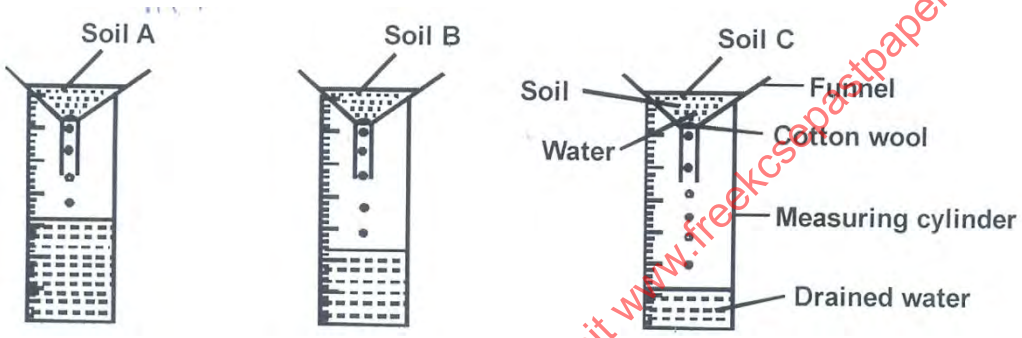
20. Study the illustration shown below and answer the questions that follow.

a) What is the fertilizer grade of the above fertilizer material? (1 mk)

b) Calculate the amount of filter material in the above fertilizer material (2 mks)

c) State <u>two</u> disadvantages of applying the above fertilizer in crop production. (2mks)

21. The diagram below illustrate a experiment on soil



a) State the aim of the experiment (1 mk)

b) If the volume of water illustrated in the measuring cylinder was observed after one hour identify the soil sample A and B

Soil A (1 mk)

Soil B (1 mk)

c) State <u>two</u> ways in which the soil structure of the sample labelled c above can be improved. (2 mks)

<u>SECTION C – (40 marks)</u>

Answer any two questions from this section

22. a) Outline <u>six</u> ways of maintaining soil fertility (6mks)

b) Describe <u>four</u> advantages of tillage as a method of weed control (4 mks)

c) Give <u>four</u> types of pesticide based on their mode of action (4 mks)

d) Describe the steps followed in single stem pruning in coffee (6 mks)

23. a) Give the advantages of mixed grass pasture over a pure grass pasture (6 mks)

b) Describe the establishment and management of grass pasture to the time it is ready for grazing under the following sub-heading.

i) Land preparation

ii) Planting

iii) Field management practices.

24. a) Explain <u>six</u> advantages of mulching in crop production (6 mks)

b) Explain <u>six</u> factors that should be considered when sitting a nursery bed (6 mks)

c) Describe various biotic factors influencing agricultural production (8mks)

GATANGA
443/2
AGRICULTURE
PAPER 2 (THEORY)

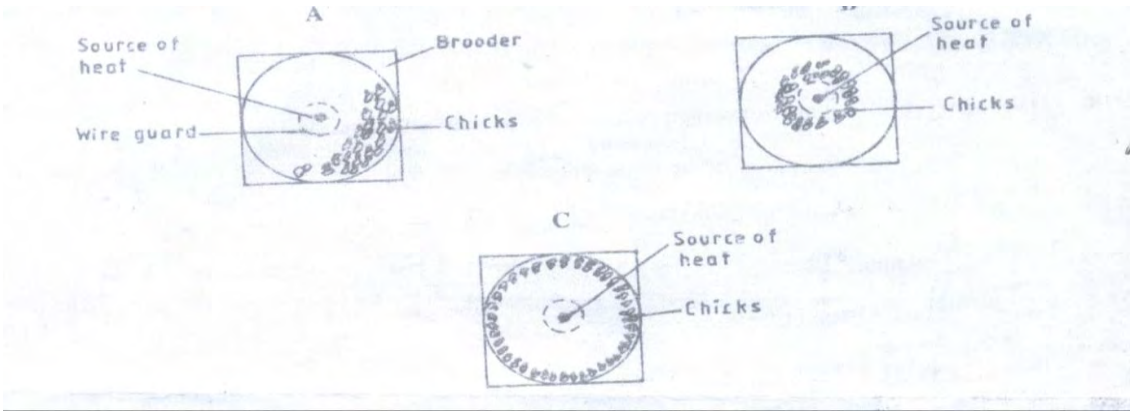
SECTION A (30 MARKS)
Answer All The Questions In This Section In The Space Provided

1. State 4 roles of workers bees in a colony 2mks
2. Name a tool used for :
   a. Tightening barbed wire
   b. Digging and collecting manure 1mk
3. List four routes through which pathogens can enter the body of an animal 2mks
4. What is the name given where hind legs comes out first during parturition 1mk
5. Give two reasons for hanging green vegetables in a dip litter house 1mk
6. Name a breed of pig which has the following characteristics
   i. Black body with a white patch in the shoulders
   ii. Upright/ erect ears, broad and dished snout 1mk
7. Mention two tools used in cutting mature horns in a cattle 1mk
8. Name the other tool used together with
   a. Canular
   b. Brace
   c. Elastrator
   d. Wood chisel 2mks
9. Give four factors that would affect digestibility of food in livestock 2mks
10. State two reasons why the wire loop hanging in (K.T.B.H) Kenya Bar Hive is recommended to be smeared with grease 1mks
11. State four reasons for castration in pig production 2mks
12. Distinguish between the following practices as used in livestock production
    a. Crutching and ringing in sheep management 2mks
    b. Cropping and harvesting in fish farming 1 ½ Mks
13. List the three methods that dairy farmers can use in outbreeding 1 ½ mks
14. List four farm structures that are necessary for holding dairy animals 2mks
15. Name the causal agent of the following livestock diseases in cattle.
    i. Anaplasmosis
    ii. Anthrax
    iii. Swine fever
    iv. Brucellosis 2mks
16. State three cultural uses of livestock 1 ½ mks
17. Name the intermediate hosts of the following endoparasites 1mks
    a. Liverflukes
    b. Taenia sapinata
18. Give two advantages of artificial calf rearing in dairy cattle management 1mks
19. What is dry cow therapy 1mks

SECTION B (20MKS)

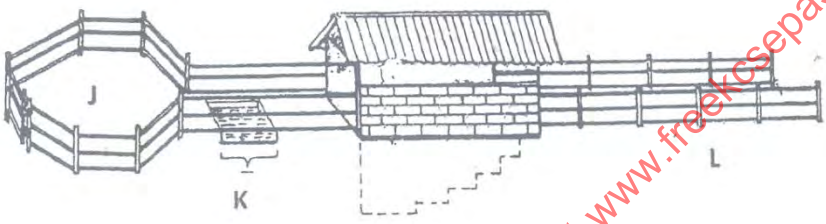
Answer All The Questions In This Section In The Space Provided

20. The following illustrations shows the behavior of chicks in a brooder study them carefully and answer the questions that follows



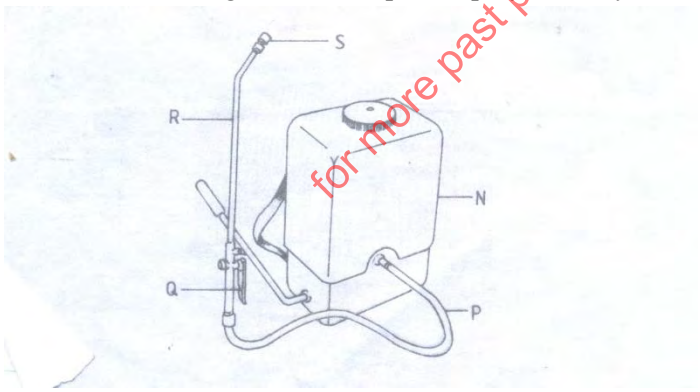
a. Explain the causes of behavior observed in chicks for each of the illustrations labeled A, B and C 3mks
b. Give a reason for making the brooder wall round in shape 1mks

21. The diagram below shows a plunge dip



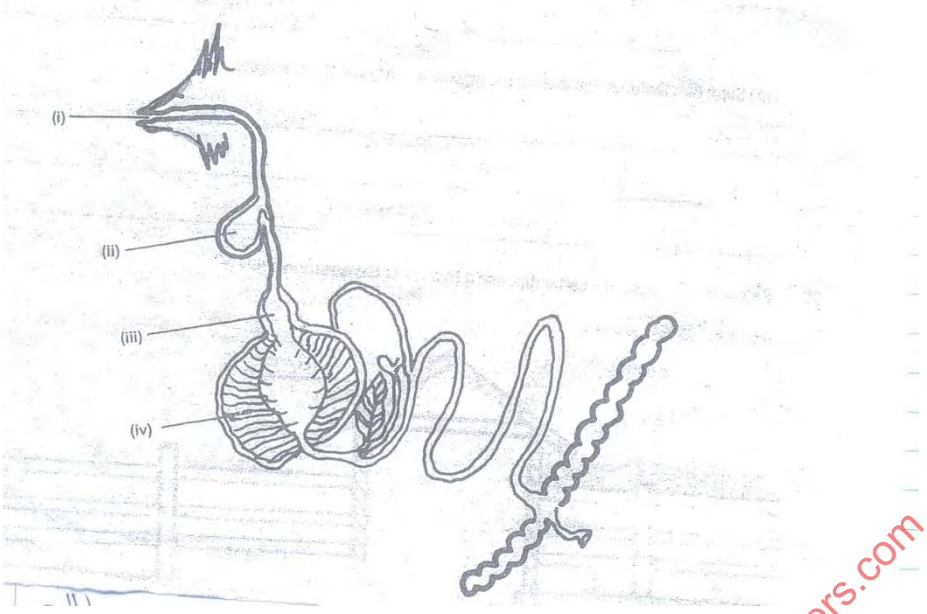
a. State one use of each of the parts of the dip labeled J, K and L 3mks
b. State two precautions a farmer should take on the dip wash to ensure effective dipping 2mks
c. State two uses of a roof of the dip 1mk

22. Below is a diagram of a knapsack sprayer. Study it carefully and answer the questions that follows



a. Name the parts labeled N, P, Q and R 2mks
b. State one function of the part labeled S 1mk

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



a. The diagram above shows digestive system of a chicken
Name the parts ;2mks

b. (i) State four functions of the part (i) above 2mks
(ii) What is the role of the part labeled (iv) in the above diagram 2mks
(iii) State two features that enable the organs to carry out its function 1mk.

SECTION C (40MARKS)

Answer Any Two Questions From This Section In The Spaces Provided After Questions

24. (i) Discuss the management of day old chicks to the end of brooding 10mks
(ii) Explain five functions of water in nutrition 5mks
(iii) Give the management practices carried out on a hedge 5mks

25. (i) Describe the life cycle of a three host tick 10mks
(ii) Explain five factors to consider when selecting a dairy cattle breeding stock 10mks

26. (i) State five advantages of battery cage system of poultry management 5mks
(ii) State five differences between ruminant and non ruminant digestion 5mks
(iii) What factors should a farmer consider when selecting materials for constructing a dairy cattle shed 10mks

CEKENA PRE-MOCK
AGRICULTURE
443/1
FORM IV

SECTION A 30 MARKS
Answer all questions in the spaces provided

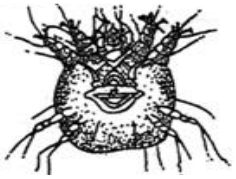
1. Give two factors which determine the farming system farmers practice (1 mrk)
2. Differentiate between the term soil texture and soil structure (1 mrk)
3. Name a crop weed that is (2 mrk)
   i. Parasitic to maize crop ……..
   ii. Alternate host for rust ……..
   iii. Aquatic……
   iv. Has medicinal value
4. Name any two methods that can be used to detect mineral nutrient deficiency (2 mrk)
5. State three advantages of drainage as method of land reclamation (1 ½ mk)
6. Give four benefits of topdressing in the management of pastures (2 mks)
7. List four parameters of national economic development (2 mks)
8. Give two reasons why staking is carried out on tomatoes (2 mks)
9. Give three methods through which primary tillage may be achieved (1 ½ mk)
10. List four benefits of land consolidation in farming (2 mks)
11. Give four characteristics of trees and shrubs suitable for agro forestry (2 mks)
12. State four reasons why fruit crops are pruned (2 mks)
13. Give four disadvantages of using organic manures in crop production (2 mks)
14. Give one example of the following categories of vegetables (2 mks)
    i. Leaf vegetable
    ii. Fruit vegetable
    iii. Root vegetable
    iv. Stem vegetable
15. i). Give two destructive effects of moles in crop production (1 mk)
    ii). Apart from moles state two other rodent pest (1 mk)
16. State four effects of low level of education in agricultural production (2 mks)
17. Give four advantages of leasehold – tenancy tenure system. (2 mks)

SECTION B – 20 MARKS
Answer all questions in this section in the spaces provided.

18. A farmer has a piece of land on which he can grow maize, cabbages and beans. The expected yields and selling prices of the three crops are shown below

CROP	YIELD (KG)	SELLING PRICE(KSH/KG)
Maize	4000	40/=
Cabbages	2800	60/=
Beans	3000	80/=

    i). If the cost of producing any of the three crops is the same
    a). Which crop should the farmer grow (show your working) (2 mks)
    b). i). State the farmers opportunity cost (1 mk)
    ii). Give a reason for your answer in b). i). above (1 mk)
    c). Give a reason why farmers always have to make a choice on the enterprise to implement on the farm (1 mk)
19. Explain the procedure of seed inoculation (5 mks)
20. a). The diagram below illustrates a crop pest



i). Identify the pest (1 mk)

ii). Give two reasons why the above pest is difficult to control (2 mks)

b). The table below shows some crops and symptoms of certain diseases that attack them. Identify the disease in each case (1 mk)

Crop attacked	Symptoms of disease	Identity of disease
Coffee	Dark blotches, spots on flowers, brown rings on leaves	
Cabbage seedling	Cobweb-like mass of fungi on the stems	

21. The diagram below shows a soil and water conservation structure

a). Identify the structure (1 mk)

b). Name the part labeled land M and state the function of each part (2 mks)

c). How can the part labeled L be stabilized? (1 mk)

d). State any two factors that would determine the width and depth of the part labeled M (1 mk)

SECTION C

Answer any two questions in this section in the spaces provided

22. a). Explain challenges faced by Kenyan vegetable farmers in the production of crops (10 mks)

b). Discuss various safety precaution observed when using herbicides (5 mks)

c). Describe the benefits of minimum tillage in crop production (5 mks)

23. a). Describe the production of beans(Phaseolusvulgaris) under the following sub heading

i. Seedbed preparation (2 mks)

ii. Planting (4 mks)

iii. Field management practices (3 mks)

iv. Harvesting (3 mks)

b). Outline the advantages of a mixed grass legume pasture over pure grass pastures. (8 mks)

24. a). Describe the process of chemical water treatment. (12 mks)

b). Explain the factors that determine the spacing of crops in the farm (8 mks)

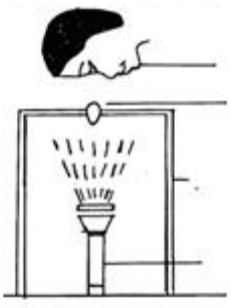
CEKENA
AGRICULTURE
443/2
FORM IV

SECTION A 30 MARKS
Answer all questions in this section in the spaces provided

1. State two functions of ventilations in animal houses (1 mk)
2. State three importance of production ratio in livestock nutrition (1 ½ mk)
   a). Name three meat breeds of sheep (1 ½ mk)
   b). Name one wool breed of sheep (½mk)
3. Why is drenching alone not an effective method of controlling internal parasites in livestock (1 ½ mk)
4. Outline four possible behaviors of chicks in a brooder when the temperatures are high (2 mks)
5. State the functional difference between the following tools and equipment
   a). Mortise gauge and marking gauge (1 mk)
   b). Bolus gun and drenching gun (1 mk)
6. Apart from dipping, give two other methods of acaricide application (1 mk)
7. Give two reason why raddling is carried out in sheep management (1 mk)
8. Outline four female hormones involved in the oestrus cycle (2 mks)
9. State four reasons why cows lick their young ones soon after parturition (2 mks)
10. Give two major physical differences between Dromedary and bacteria camels (2mks)
11. Define the following terms as used in livestock production (2 mks)
    i). Notifiable disease
    ii). Zoonotic disease
12. Give four advantages of a two stroke cycle engine (2 mk)
13. Give the importance of each of the following when handling milk
    i). Use of seamless buckets (½mk)
    ii). Use of equipments free from copper and iron (½mk)
14. Give the function of the following parts of a fish pond (1 ½ mk)
    i). Spill way
    ii). Inlet
    iii). Outlet
15. Give four advantages of Kenya Top bar hive over log hive. (2 mks)
16. Name two tractor drawn impliments that are attached to the drawbar (1 mk)
17. Give three disadvantages of a spray race (2 mks)
18. Define the term dry matter (1 mk)

SECTION B 20 MARKS
Answer all questions in this section in the spaces provided

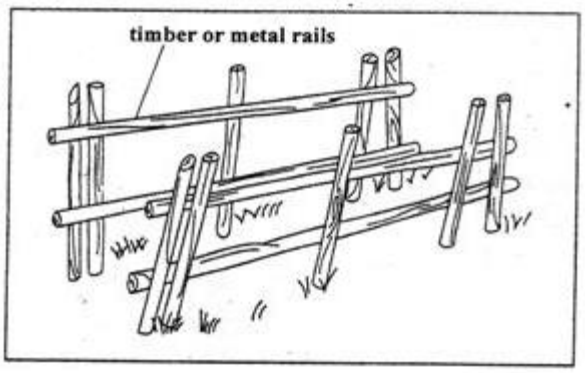
19. The diagram below shows a certain practice in poultry production.



    a). Identify the above practice (1 mk)
    b). State three abnormalities that can be detected by using the above procedure (3 mk)

c). What is the function of egg yolk? (1 mk)

20. Mr. Baraza wanted to prepare a feed ration containing 20% DCP (Digestible Crude Protein). He used simsim seed cake which contains 50% DCP. Using the pearson's square method, compute the amounts of oat and simsim seed cake he would use to make a 100kg ration. Show your working (5 mks)
21. Study the farm structure below and answer the question that follow



a). Identify the structure (1 mk)
b). Identify FOUR routine management practices that can be carried out using the above structure (2 mks)
c). State TWO management practices of the above structure (2 mks)

22. The diagrams below illustrates farm tools, study them and answer the questions that follow.

a). Identify the tools A and B (2 mks)
b). State the uses of the tools above (2 mks)
c). Give the maintenance practice required on the moving parts of tool B. (1 mk)

SECTION C 40 MARKS

Answer any two questions in this section in the spaces provided

23. a). Give four reasons for dehorning in livestock production (4 mks)
b). Explain eight, factors to be considered when selecting a breeding stock (8 mks)
24. a). Outline the differences between petrol and diesel tractor engines (8 mks)
b). Explain three factors that farmer should consider before buying a tractor for use as a source of power on the farm. (6 mks).
c). Outline six ways of controlling vices in poultry (6 mks)
25. a). Explain the general control measures of parasites in livestock (10 mks)
b). Outline five reasons of keeping livestock healthy (5 mks)
c). State five differences between digestive system of ruminant and non-ruminant animals (5 mks)

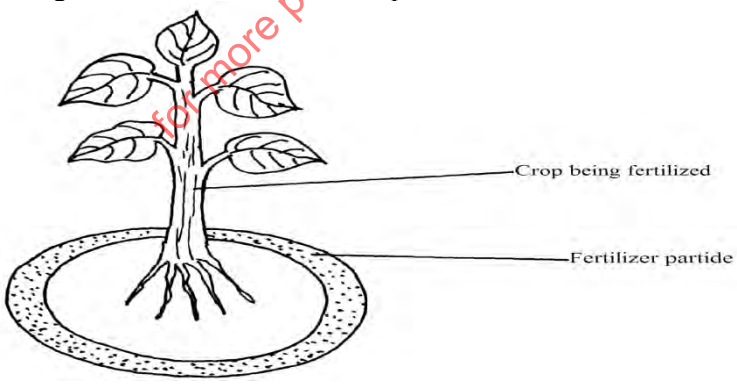
KISII CLUSTER
443/1
AGRICULTURE
PAPER 1
JUNE 2018

SECTION A (30mks)
Answer ALL question in the spaces provided.

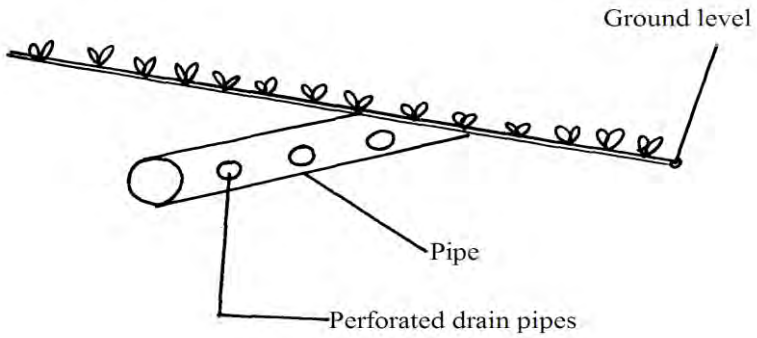
1. Give **four** reasons for harvesting forage crops during flowering stage. (2mks)
2. a) State **two** characteristic of a mother plant where stem cutting should be obtained. (1mk)
3. Differentiate between fixed capital and liquid capital. (1mk)
4. a) Give the technical term used to describe aerial layering. (1mk)
   b) Give **two** reasons for liming in crop production. (1mk).
5. a) In the grid provided, illustrate two soil sampling methods. (2mks)
   b) State **two** precaution taken in soil sampling. (1mk)
6. State the function of the following chemical and material in soil testing process. (2mks)
   i) Distilled water.
   ii) Barrium sulphate.
7. Give **four** pieces of information contained in delivery note. (2mks)
8. Name **two** forms in which nitrogen is available to crops. (1mk)
9. List **two** condition that favour practice of shifting cultivation (1mk)
10. a) Give **three** factors that promote successful grafting in seedling. (1 ½ mk)
    b) State **two** ways of achieving hardening off in seedlings. (1mk)
11. State **three** harmful effects of weeds in pastures. (1 ½ mks)
12. a) Name **three** chemical weathering process (1 ½ mk)
    b) Name **two** factors that determine soil colour. (1mk)
13. State **four** advantages of individual owner operator in land tenure system. (2mks)
14. List **four** factors that determine quality of hay. (2mks)
15. Give **four** advantages of mixed farming to a farmer. (2mks)
16. State **three** ways in which trees improve soil productivity. (1 ½ mks)
17. List **two** sources of organic matter in the soil. (1mk)
18. Define the following terms as used in crop production. (2mks)
    i) Changing the cycle.
    ii) Propping

SECTION B (20mks)

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

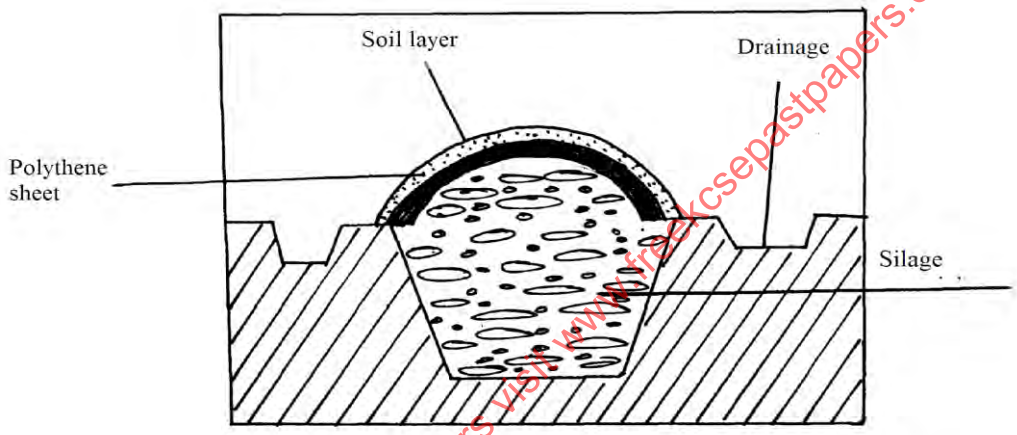


    a) Identify the method of fertilizer application shown above. (1mk)
    b) Name other **two** methods of fertilizer application. (1mk)
    c) Give **three** characteristic of fertilizer applied using the method identified in (a) above. (3mks)
20. Carefully study the illustration below and answer the questions that follow.



i) Name the irrigation method shown in the illustration. (1mk)
ii) Outline **two** advantages of the above method. (2mks)
iii) Give **two** maintenance practices carried out on sprinklers. (2mks).

21. The diagram below shows a method of forage preservation.



i) Identify the method of ensiling shown above. (1mk)
ii) Give **two** factors that influence size of the above structure. (2mks)
iii) Explain **two** reasons why molasses is added during silage making process. (2mks)

22. The following table gives the weekly demand and supply schedules of potatoes.

Price per kg (Shs)	Demand in millions of kgs	Supply in millions pf kgs
10	23	59
9	30	57
8	36	54
7	41	50
6	45	45
5	48	39
4	50	32
3	51	25

Use the table to answer the following questions.
a) What is the equilibrium price? (1mk)
b) State the effect of a government imposing a maximum price of;
i) Ksh 5 per kg; (1mk)

ii) Ksh 7 per kg; (1mk)

c) If the government guaranteed a potato supply at price of Ksh. 7 per kg, what quantity would it have to purchase to maintain this price? (1mk)

d) Alternatively the government bought all the potatoes on offer at Ksh. 7 per kg, what price would it have to change the consumers to dispose of this quantity. (1mk)

SECTION C (40mks)

Answer any two questions

23. a) Describe production of dry beans under the following sub-heading.
    i) Land preparation (4mks)
    ii) Planting (6mks)
    b) Explain five ways by which a farmer can adjust to risks and uncertainty. (10mks)
24. a) Explain four reasons why storage is an important function in a farming system. (4mks)
    b) List factors that determine the seed rate in a given area. (6mks)
    c) Discuss factors that a farmer may consider in designing a good crop rotation programme (10mks)
25. a) Discuss biological and cultural methods of soil and water conservation (10mks)
    b) Explain the importance of beneficial biological factors in crop production. (10mks)

443/2
AGRICULTURE
Paper 2
June 2018

SECTION A (30 MARKS)
Answer all questions in this section

1. State the use of each of the following tools in bee production.
   (a) Swarm net …… (½mk)
   (b) Catcher box …… (½mk)
2. List **two** dairy goats. (1mk)
3. (a) State **one** chemical used in relieving a ruminant animal of bloat (½ mk)
   (b) State **two** reasons why drenching alone is not an effective method of controlling internal parasite in livestock. (1mk)
4. (a) State the class of each of the following feedstuff
      (i) Molasses…… (½mk)
      (ii) Mac Lick…… (½mk)
   (b) Name the type of breeding system represented below.
      Ayrshire sire x Boran Dam ⟶ F1 heifer x Hereford. (½mk)
5. Give **three** importance of flushing in sheep management. (1½mks)
6. (a) Name the causative organism of Gumboro disease. (½mk)
   (b) State **two** symptoms of coccidiosis infection in poultry. (1mk)
7. State **two** differences between the dromedary and Bactrian breed of camels. (2mks)

Dromedary	**Bactrian**
(i)	(i)
(ii)	(ii)

8. State **one** way by which each of the following practices help in disease control. (2mks)
   (a) Proper feeding.
   (b) Proper housing
9. (a) State **three** effects of tsetsefly infestation. (1½mks)
   (b) State **two** ways of controlling tse tse flies. (1mk)
   (c) Give **one** reason why tse tse fly control is considered as land reclamation method. (½mks)
10. State **two** ways in which a production ration may be utilized by cattle. (1mk)
11. Name **two** diseases in cattle that may be spread through breeding. (1mk)
12. (a) Under what conditions would a farmer prefer to use an ox – cart instead of a tractor – drawn trailer. Give **three** reasons. (1½mk)
    (b) Name **three** implements that may be connected to power take off shaft of a tractor. (1½mks)
13. Name a pig breed with white colour on feet, nose and tail. (½mk)
14. State **three** importance of keeping livestock healthy. (1½mks)
15. Name **three** importance of lubricating system in tractor. (1½mks)
16. (a) Name **three** mechanical methods of controlling ticks. (1½mks)
    (b) Name the intermediate host of liver fluke. (½mk)
17. Name **three** methods of livestock selection. (1½mks)
18 (a) Distinguish between crutching and ringing as used in livestock production. (1mk)
    (b) Give a reason for packing eggs with the broadside upwards in the egg tray. (½mk)
19. (a) State **two** conditions, which would make it necessary to feed bees. (1mk)
    (b) Name **two** faults of ignition system of a tractor. (1mk)

c) List **two** maintenance practices carried out on the tool. (2mk)

SECTION C (40 MARKS)

Answer any two question

24. (a) Discuss the essentials of clean milk production (14mks)
    (b) Name the common poultry vices and outline their control (6mks)
25. (a) State **six** advantages of farm mechanization (6mks)
    (b) Discuss the maintenance practices carried out on a tractor (10mks)
    (c) List **four** strokes in a 4 – stroke cycle engine (4mks)
26. Explain the measure used to control;
    (a) Livestock diseases (4mks)
    (b) Livestock parasite (6mks)

COMPLIANT II
443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

SECTION A:(30 MARKS)

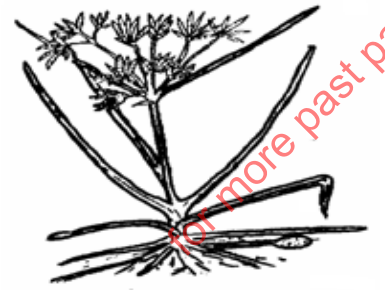
Answer all the questions in this section in the spaces provided:

1. List **four** factors which are considered when choosing type of irrigation method to be used in a farm. (2marks)
2. List **four** climatical factors which influence soil formation. (2marks)
3. State **three** forms in which soil water occurs. (1½marks)
4. List **three** disadvantages of concession or company form of land ownership. (1½marks)
5. State **four** factors which need to be considered when designing a crop rotation programme. (2marks)
6. List **three** damages caused by nematodes on crops. (1½marks)
7. State **three** symptoms of magnesium deficiency in crops. (1½marks)
8. State **four** factors of production. (2marks)
9. State **four** features of good farm records. (2marks)
10. Name **four** examples of pasture grasses found in high altitude. (2marks)
11. What is topping as used in pasture management? (1mark)
12. Give **four** reasons why there is a need for pasture conservation. (2marks)
13. Why do many farmers prefer to use organic manures in small scale farming rather than large scale? Give **four** reasons.
14. Give **four** advantages of row planting over broadcasting. (2marks)
15. State **four** roles of trees in soil and water conservation. (2marks)
16. List **four** measures which can be undertaken to control riverbank erosion. (2marks)
17. Name **two** forms of gulley erosion. (1mark)

SECTION B: (20 MARKS)

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

18. Below are diagrams of weeds. Study the diagrams carefully and answer the questions that follow.

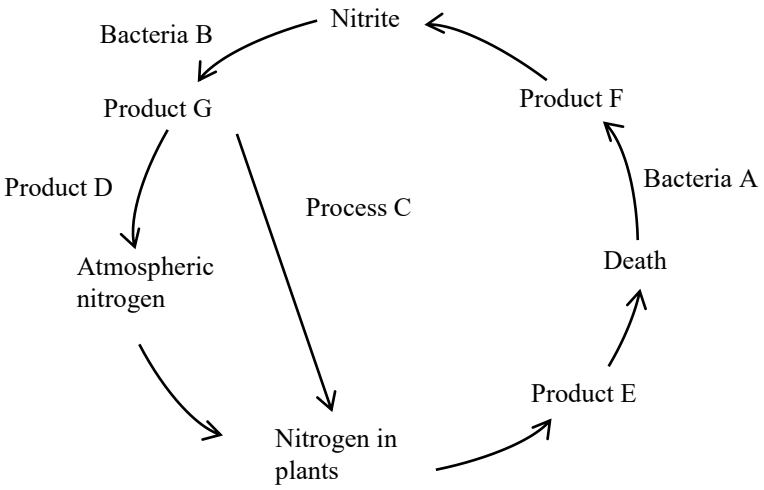


C

D

(a) Identify the weeds illustrated above**.** (2marks)
(b) State why it is difficult to control weed **C** (1mark)
(c) Which is the main problem posed by weed **C** and **D** in the farm. (1mark)

19. The diagram **below** shows a nitrogen cycle.



(a) Identify the bacteria labelled: (2marks)
(b) State the processes labelled. (2marks)
(c) Name the products. (3marks)
(d) State **two** ways in which free nitrogen in the atmosphere is made available for plant use. (2marks)

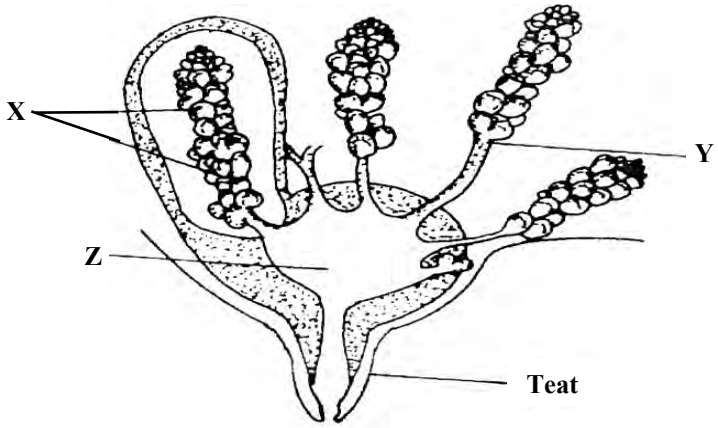
20. (a) Calculate the amount of K_2O contained in 400kg of a compound fertilizer 25:10:5. (Show your working). (3marks)
(b) What do figure 10 stands for? (1mark)
(c) What is a compound fertilizer? (1mark)

SECTION C: (40 MARKS)

Answer any TWO questions in this section in the spaces provided:

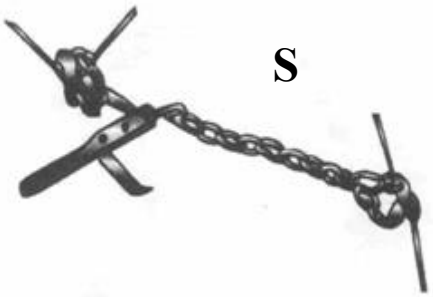
21. Describe the raising of maize crop for dry grains from seedbed preparation to harvesting. (20marks)
22. (a) Outline the procedure of transplanting tree seedling? (10marks)
(b) How do soil losses its fertility? (10marks)
23. (a) Explain the cultural methods of crop pest control. (15marks)
(b) Name **five** symptoms of viral infections in crops. (5marks)

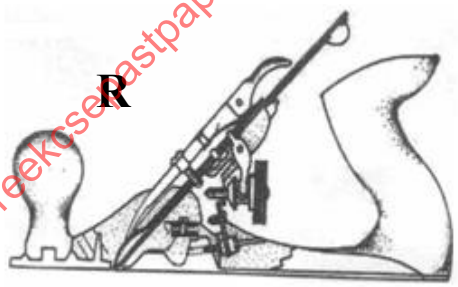
20. Use the diagram **below** shows a cross section of an under. Study it and answer the questions that follow.



(a) Identify the parts labelled **X, Y, Z**. (3marks)
(b) Give **one** function of the part labelled **X** (1mark)

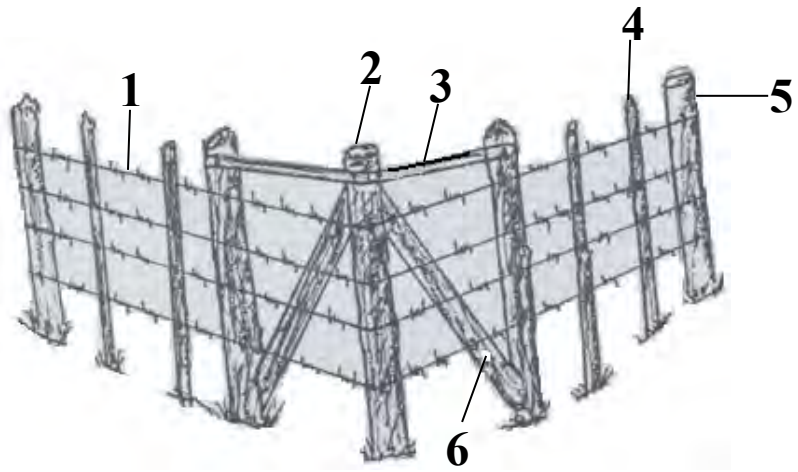
21. Diagrams **below** illustrate farm tools. Use them to answer questions that follow.





(a) Identify each of tools. (1mark)
(b) State the appropriate use of tool **R** (1mark)
(c) Name another tool used together with tools **S**. (1mark)
(d) Give **two** maintenance practices for tool **R** (1mark)

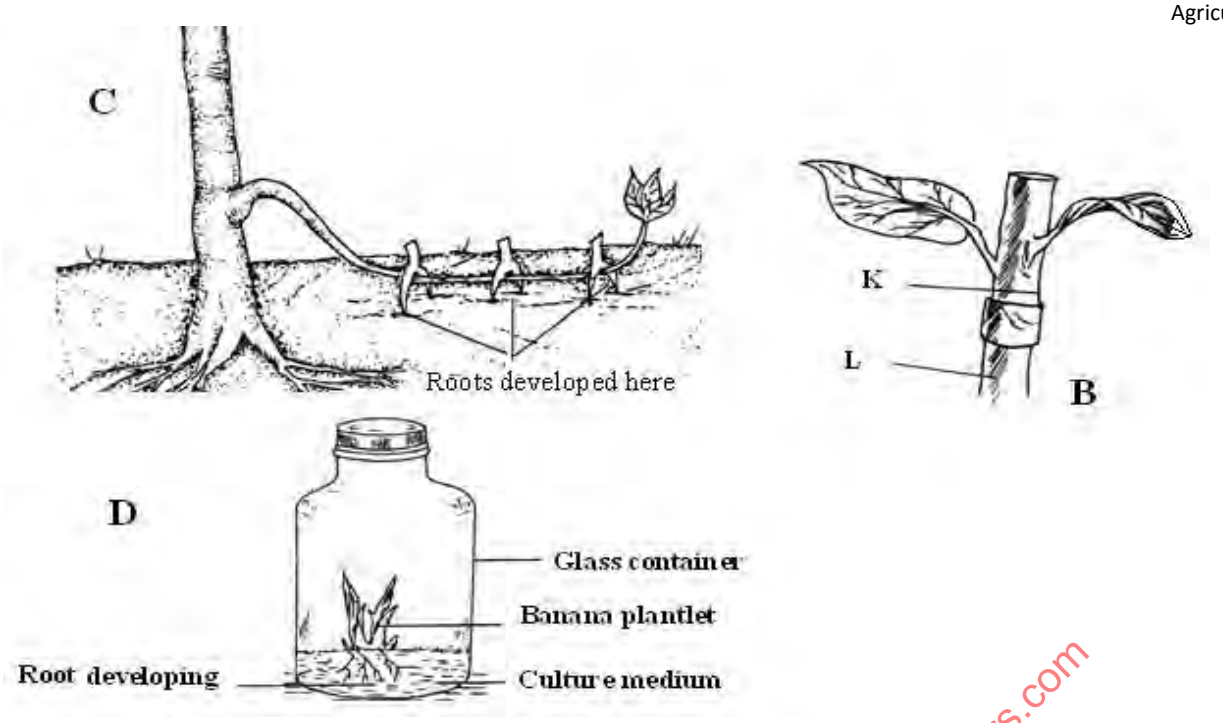
22. The illustration **below** shows a form structure. Use it to answer questions that follow.



(a) Identify the structure? (1mark)
(b) Identify parts. (4marks)
(c) What is the importance of this structure in the farm? (1mark)

SECTION C :(40 MARKS)
Answer any TWO questions in this section in the spaces provided:

23. Describe the management of layers in the deep litter system starting from the point of lay. (20marks)
24. (a) Describe the characteristics of a poor layer, which should be considered during culling. (10marks)
    (b) Describe the uses of farm fences. (10marks)
25. (a) What factors should a farmer consider in selecting construction materials for a farm structure. (10marks)
    (b) Describe management practices that would ensure clean milk production in dairy farm. (10marks)



a. Identify the methods labeled B, C, and D (3 marks)
b. Name one crop each propagated using method B, C and D. (3 marks)
c. Name the parts labeled K and L in B (2 marks)

17. a. What is opportunity cost in agricultural economics? (1mark)
b. A farmer has a piece of land on which he can produce maize and barley. The yield and selling prices of the crops are as shown below.

	YIELD (90 kgs bags)	Selling price (Ksh 1kg)
MAIZE	2500	800
BARLEY	2000	1500

The farmer decides to produce maize. Assuming the cost of producing any of the crops is the same;
i. calculate the farmer's opportunity cost. Show your working. (2 marks)
ii. Which crop should the farmer grow? (1 mark)
iii. Give one circumstance under which opportunity cost may not a raise. (½ mark)

SECTION C (40 MARKS)

18. a. Describe the different methods a farmer can adjust to risks and uncertainties. (7 marks)
b. Describe the various processes through which soil can lose fertility. (7 marks)
c. Outline six effects of wind on agricultural production. (6 marks)

19. a. Describe the effects of Solifluction on land potentially in Kenya. (10 marks)
b. Outline the importance of agroforestry in soil and water conservation. (4 marks)
c. Describe three forms of agroforestry. (6 marks)

20. a. Describe the procedure of silage making. (10 marks)
b. Give four reasons why green manure is not commonly used. (4 marks)
c. State six advantages of land consolidation. (6 marks)

GATUNDU SOUTH TRIAL EXAMINATION
JULY 2018
AGRICULTURE PAPER 1
SECTION A (30MKS)

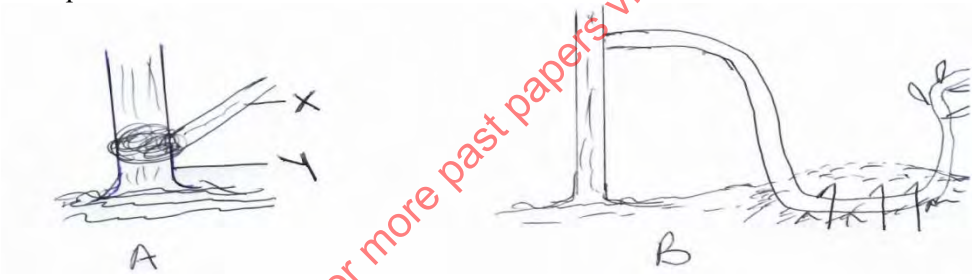
Answer all questions in the spaces provided.

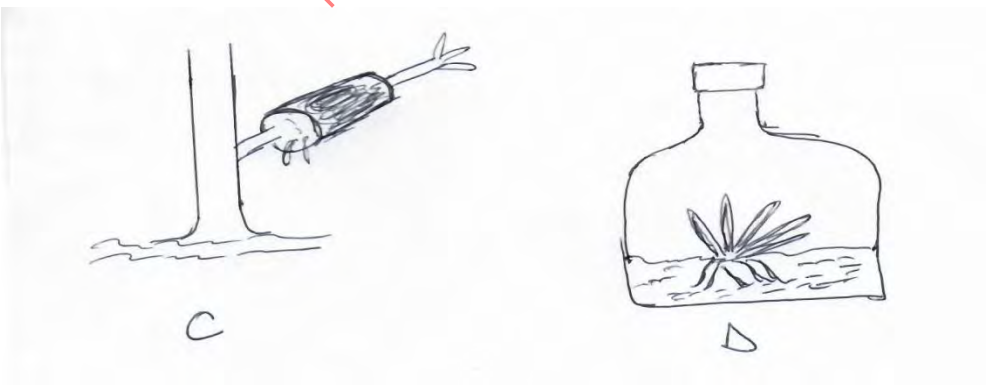
1. State four factors influencing the choice of the farming methods a farmer may use. (2mks)
2. State four advantages of drip irrigation. (2mks)
3. Outline four farming practices that destroy soil structure. (2mks)
4. State four reasons why a farmer may fail to get profit from a farming enterprise. (2mks)
5. Give four advantages of preparing land early for planting sorghum. (2mks)
6. Differentiate between hybrid and composite as used in crop production. (2mks)
7. What is meant by term domestication as used in Agricultural production? (1mk)
8. Highlight two ways of hardening off tomato seedlings before transplanting. (1mk)
9. Give a reason as to why a farmer is supposed to observe the following precautions in the farm. (2mks)
   a) Always store farm yard manure under a shade.
   b) Wear gloves while applying nitrogenous fertilizers.
10. Give two reasons for conserving forage. (1mk)
11. Outline four ways in which grass help to conserve soil. (2mks)
12. Give two signs of blight in a field of tomatoes. (1mk)
13. State two factors that adapt weeds excellently to their environment. (1mk)
14. Give two reasons for inoculating legume seeds before planting. (1mk)
15. Give two reasons why most of Kenyan farmers practice small scale farming. (1mk)
16. Define the law of profit maximization (1mk)
17. Distinguish between stocking rate and carrying capacity as used in forage production (2mks)
18. Outline four ways a farmer can use to improve labour productivity in the farm. (2mks)
19. State 4 ways of modifying soil pH. (2mks)

SECTION B (20MKS)

Answer all questions in the spaces provided.

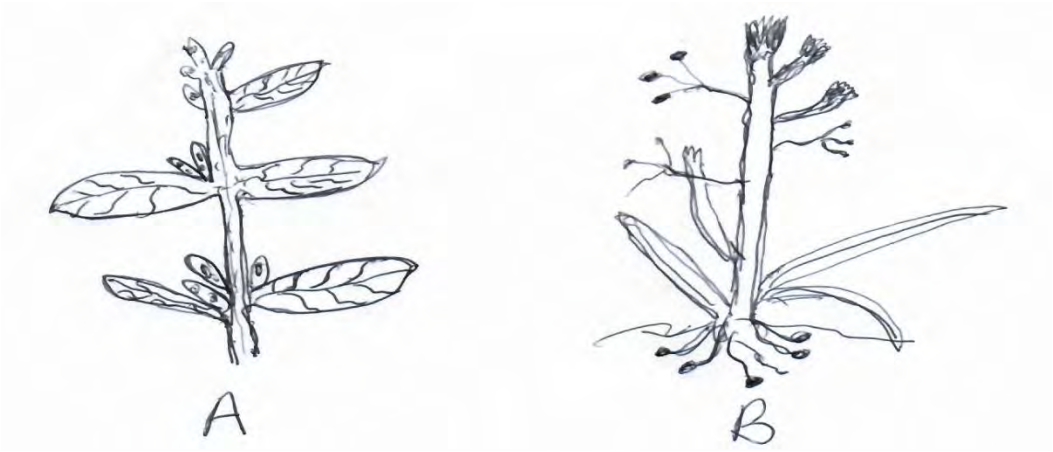
20. The diagram below illustrates different methods used in crop propagation. Study the diagrams and answer the questions that follow.





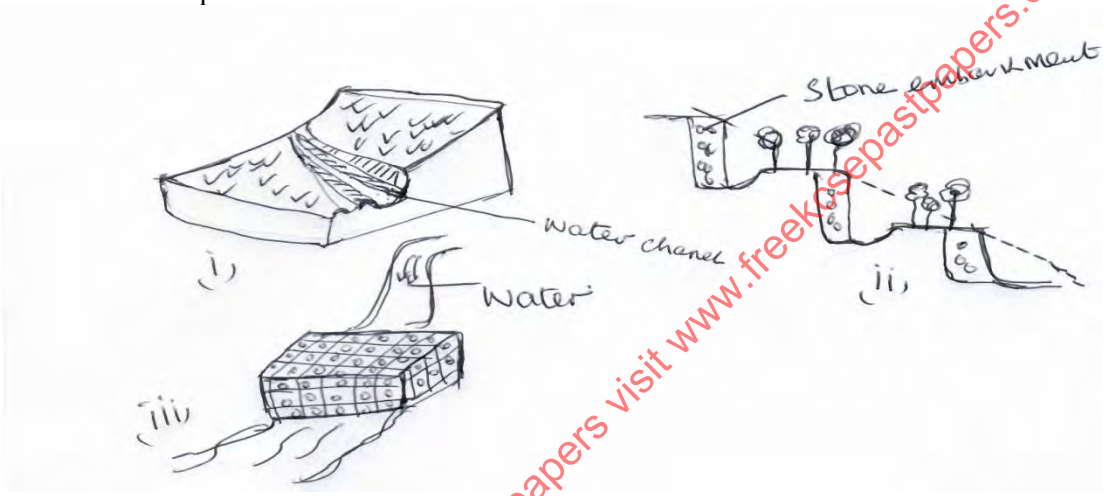
   a) Identify the methods of crop propagation illustrated by A,B and D. (3mks)
   b) Identify the parts labelled X and Y in diagram A. (2mks)
   c) Under what conditions is method C used by farmers. (1mk)
   d) Give two advantages of using the method illustrated in diagram D after bananas are planted in the main field. (2mks)

21. The diagram below illustrates some common weed. Study it carefully and answer the questions that follow.



a) Identify the weeds labelled A and B (2mks)
b) State one factor that makes weed B difficult to control in a pasture field. (1mk)
c) State one economic importance of each of the weeds labelled A and B. (2mks)

22. The diagrams below illustrates different methods used in soil and water conservation. Study the methods and answer the questions that follow.



a) Identify the methods illustrated by (i) (ii) and (iii). (3mks)
b) State two methods by which the structure in (iii) controls soil erosion. (2mks)
c) Name two materials used to make the structure in (iii) above. (2mks)

SECTION C (40MKS)
Answer any two questions from this section.

23. (a) Describe production of Napier grass under the following sub-headings.
(i) Land preparation (2mks)
(ii) Planting and planting materials (2mks)
(iii) Fertilizer application (2mks)
(iv) Defoliation (2mks)
(v) Weed control (2mks)
(b) Explain six factors that can influence a well-designed crop rotation programme. (6mks)
(c) Give four signs that would enable you to identify a compost manure that is ready for use. (4mks)

24. (a) Describe procedure of preparing silage. (5mks)
(b) A farmer carried out the following transactions on his farm;

Crop – Maize
Yield – 50 bags/ha
Price/unit – Ksh1000

Sale of maize – 50 bags

Variable costs per hectare	Ksh
Land preparation	5000
Purchase of seeds	3000
Purchase of DAP	3600
Purchase of CAN	2000
Purchase of jembes	2500
Purchase of slashers	1000
Other expenses	500

Using the information provided, calculate the Gross margin. (5mks)

(c) Describe the management practices carries out in a cabbage nursery. (10mks)

25. (a) Describe process of water treatment in a water treatment plant. (10mks)

(b) Describe the role of Kenya meat commission. (4mks)

(c) Explain six cultural methods of controlling crop diseases. (6mks)

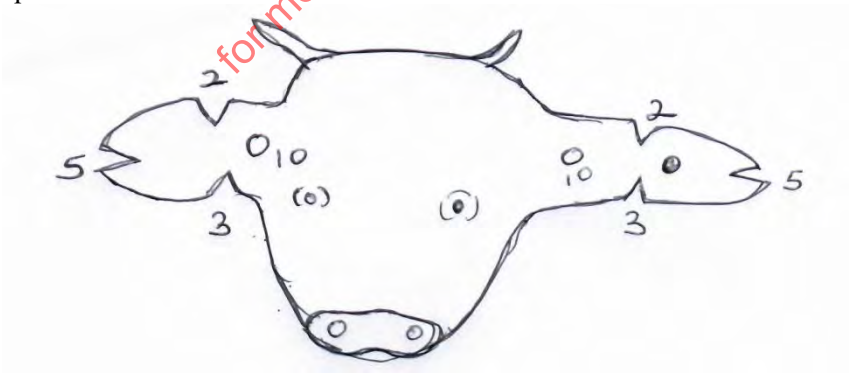
GATUNDU SOUTH TRIAL EXAMINATION
JULY 2018
AGRICULTURE PAPER TWO
443/2

SECTION A (30MKS)
Answer all questions from this section.

1. Name two tools used in castration of livestock. (1mk)
2. Name four methods used in the farm to restrain animals. (2mks)
3. List four precautions that should be taken when using farm tools and equipment. (2mks)
4. Give two distinguishing features between the following breeds of rabbits. Kenya white and California white. (1mk)
5. Name four dairy goat breeds reared in Kenya (2mks)
6. Give two functions of calcium in dairy cows. (1mk)
7. Give two measures a poultry farmer can use to control fleas in poultry. (1mk)
8. Name the compartment of the ruminant digestive system where microbial digestion takes place. (1mk)
9. State four ways of minimizing disowning of lambs by ewes. (2mks)
10. Give the gestation period of the following animals. (2mks)
    a) Cow
    b) Sow
    c) Ewe
    d) Doe
11. Differentiate between pen lambing and drift lambing. (1mk)
12. State four reasons why castration is done in livestock. (2mks)
13. State two ways that shows how good feeding help to control livestock diseases. (1mk)
14. four factors which are considered when siting a fishpond. (2mks)
15. Name four notifiable diseases in livestock (2mks)
16. Name two causes of ruminal tympany in ruminant animals. (1mk)
17. State four qualities of marketable eggs. (2mks)
18. State the functional differences between oxytocin and adrenaline hormones which influence milk let-down. (1mk)
19. State four sources of tractor hire services. (2mks)
20. State two reasons for washing the udder of a cow with warm water before milking (1mk)

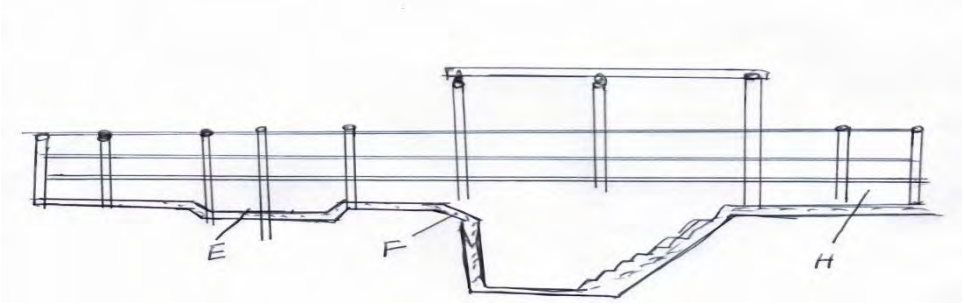
SECTION B (20MKS)
Answer all questions.

21. The diagram below illustrates a method of identification in livestock production. Study the diagram and answer the questions that follow.



    i) Name the type of identification illustrated above. (1mk)
    ii) Give the identification number of the animal illustrated in the diagram above (1mk)
    iii) Using diagrams illustrate how you can identify animals number 24 and 36 using the above method. (2mks)

22. The illustration below shows a cross section of a cattle dip.



a) Name the parts labelled E and G.
b) State one use of each of the parts labelled E,F,H. (3mks)

23. A farmer wanted to prepare a 200kg of pig's ratio containing 16% DCP. Using the Pearson's square method calculate the amount of maize containing 10% DCP and cotton seed containing 28% DCP the farmer would need to prepare the ration. Show your working. (4mks)
24. The diagram below illustrates a hoof of a sheep. Study it carefully and answer the questions that follow.

a) Name the routine management practice that should be carried out on the hoof illustrated above. (1mk)
b) State two reasons for carrying out the management practice in (a) above. (2mks)

25. The diagram below illustrates a symptom of a disease in poultry. Study it carefully and answer the questions that follow.

a) (i) Identify the disease. (1mk)
(ii) Identify the causal organism. (1mk)
Apart from the lesions, state two other symptoms of the disease. (2mks)
b) State one control measure of the disease. (1mk)

SECTION C (40MKS)
Answer any two questions from this section.

26. (a) Describe contagious abortion (Brucellosis) disease under the following sub-headings.

i) Causal organisms. (1mk)
ii) Animals affected (2mks)
iii) Symptoms (4mks)
iv) Control measures (6mks)

(b) Describe the structural features of a calf pen. (7mks)

27. (a) Outline five benefits of using biogas as a source of power on the farm. (5mks)
(b) Give five advantages of using a sub-soiler in seedbed preparation. (5mks)
(c) Explain five factors that a farmer should consider when siting a bee hive to prevent swarming of bees. (10mks)

28. (a) Give the reasons why embryo transfer use should be encouraged in dairy cattle breeding. (8mks)
(b) Giving a relevant example in each case, describe the role of the various components of a balanced diet in livestock nutrition. (12mks)

(KEDIJET) 2018
443/1
AGRICULTURE
Paper 1

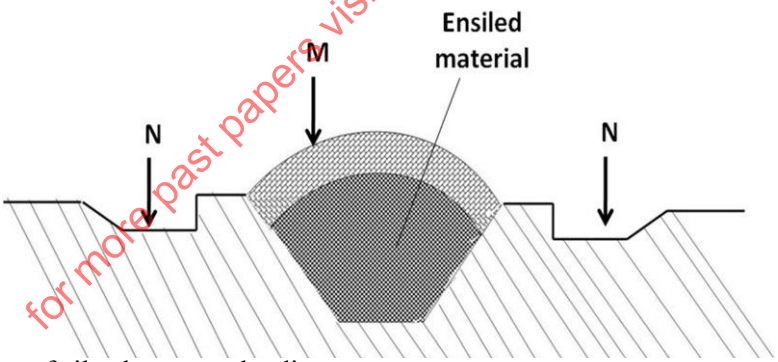
SECTION A: 30 MARKS

1. List **four** methods of farming. (2marks)
2. Give **four** factors that would determine the stage at which a crop is harvested. (2marks)
3. Give three reasons for early seedbed preparation. (1½marks)
4. State **four** disadvantages of organic mulches. (2 marks)
5. Outline four functions of magnesium in crops . (2 marks)
6. .State four objectives o f land tenure reform . (2marks)
7. .State two disadvantages of late defoliation in pasture management . (1mark)
8. .Define the following terms as used in economics .
   (a) National income (1mark)
   (b) Per capita income (1mark)
9. Give four benefits of a good soil structure in crop production . (2marks)
10. Name **four** farm records that should be kept by a poultry farmer. (2marks)
11. Give three factors that should be considered when choosing the type of labour to use on the farm. ($1^1/_2$ marks)
12. State four ways in which burning of vegetation may lead to lose of soil fertility (2 marks)
13. State ***four*** symptoms of viral diseases in crops. (2marks)
14. State ***three*** methods of classifying herbicides. (1½marks)
15. Give ***four*** methods of applying fertilizers to crops. (2marks)
16. State **three** advantages of drip irrigation (1½ marks)
17. Outline **two** ways of controlling damping off diseases on vegetable seedlings in a nursery (1mark)

SECTION B(20 MARKS)

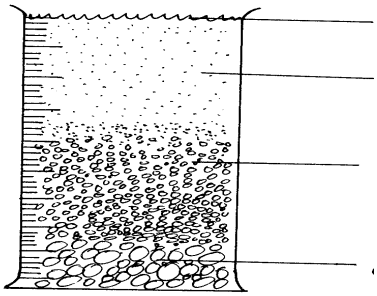
Answer all the questions in this section in the spaces provided

18. The diagram below shows a silo. Study it carefully and answer the questions that follow.



   a) Identify the type of silo shown on the diagram. (1mark)
   b) State the use of the part labeled M and N (2marks)
   c) Give **two** ways of ensuring that anaerobic conditions are achieved during silage making process.(2marks)

19. Form two student put some soil sample in a measuring cylinder, added some water and sodium carbonate and then covered the cylinder with the hand and shook the cylinder for about two minutes. He left the cylinder on the bench for one hour. The result was as shown below.

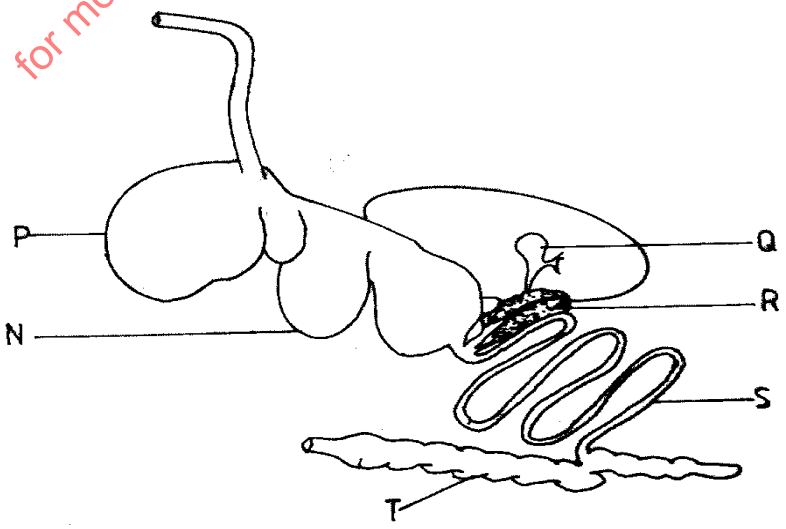


443/2
AGRICULTURE
Paper 2

SECTION A (30 MARKS)
ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. List two cattle diseases caused by viruses. (1mark)
2. State one use for each of the following tools
a) Spoke shave ……
b) Plumb bob ……
3. List two distinguishing external characteristics of California breed of rabbit. (1mark)
4. State four reasons for culling a breeding boar . (2marks)
5. State any two disadvantages that may arise from inbreeding in livestock. (1mark)
6. State two reasons for seasoning timber before use . (1mark)
7. a) Differentiate between a roughage and a concentrate feed in animal nutrition. (1mark)
   b) State four desirable qualities of a livestock ration. (2marks)
8. State three factors that may influence the amount of water intake by a farm animal . (1 ½ marks)
9. State three advantages of keeping a herd of dairy cattle healthy. (1½ marks)
10. Give three reasons for dehorning cattle. (1½ marks)
11. Give two methods of extracting honey from honey combs (1mark)
12. a) Give four reasons for candling eggs in poultry production. (2marks)
    b) Give four maintenance practices that should be carried out on the mould board plough. (2marks)
13. a) List four harmful effects of internal parasites in livestock. (2marks)
    b) i) Give two reasons for washing the udder with warm water before milking . (1mark)
       ii) Name three dairy goats kept in Kenya . (1½ marks)
14. Name **two** diseases that affect female animals only (1mark)
15. What is the function of a spillway in a fish pond (½ mark)
16. Name three types of lubrication systems used in tractors . (1½ marks)
17. Give the functions of the following parts of an ox-plough
    a) Land side …… (½mark)
    b) Draft rod …… (½ mark)
18. Give three structural requirements for a grain silo. (1½ marks)
19 State three advantages of natural feeding in calf rearing. ($1^1/_2$ marks)

SECTION B (20 MARKS)
Answer all the questions provided in this section in the spaces provided
20. The diagram below shows the digestive system of cattle. Study it and answer the questions that follow.



a). Name the parts labelled N, P and Q. (2 mark)

(a) Identify the parts labeled E and F . (2mark)
(b) State two uses of part labeled F in a foundation structure . (2marks)
(c) What ingredients are used to complete part G (1mark)

SECTION C (40 MARKS)

Answer any two questions in this section in the spaces provided at the end of each question.

24. (a) Describe the uses of fences on the farm. (10 marks)
(b) Describe Newcastle disease under the following sub-headings
(i) causal organism; (1 mark)
(ii) signs of infection; (7 mark)
(iii) control measures. (2 marks)

25. a) Describe the rearing of lambs from lambing up to weaning time (10 marks)
b) Explain **five** causes of livestock diseases (5 marks)
c) State **five** differences between Ruminants and non Ruminants (5 marks)

26. a. State and explain **five** preventive measures of livestock diseases. (10 Marks)
b. Describe long term service carried out during tractor servicing. (6 Marks)
c. Outline four functions of the gearbox in a tractor. (4 Marks)

BUURI
AGRICULTURE F.4 PP_1 EXAM
July

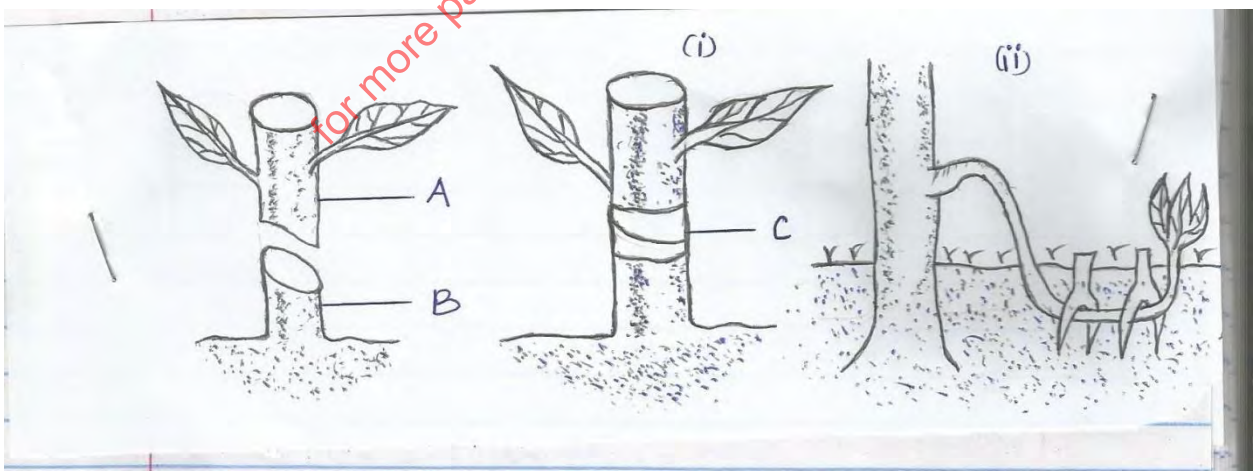
SECTION A: (30 MARKS)
Answer all the questions in this section in the spaces provided.

1. Name four methods of farming. (2mks)
2. State four pieces of information contained in the land title deeds. (2mks)
3. a) State two factors that determine the stage at which the crop is harvested. (1mk)
   b) Outline four factors considered when designing a crop rotation programme. (2mks)
4. a) Define sub soiling. (1mk)
   b) Give two causes of hardpans. (1mk)
5. State four uses of phosphorus in the growth and development of crops. (2mks)
6. Give four aspects of rainfall that a farmer may consider when deciding on type of crop to grow. (2mks)
7. List four sources of organic matter in soil. (2mks)
8. Give four reasons why seed selection is important in the establishment of crops. (2mks)
9. a) Give two aspects of a good farm record. (1mk)
   b) What are two situations in farming where opportunity cost is zero. (1mk)
10. State four advantages of timely planting. (2mks)
11. Name three types of leguminous fodder crops. (1 ½ mks)
12. Give three maintenance practices for trees in agroforestry. (1 ½ mks)
13. State four problems that farmers are likely to face when marketing their produce. (2mks)
14. Differentiate between partial budget and complete budget. (2mks)
15. Give four physical agents of weathering. (2mks)

SECTION B:(20 MARKS)
Answer all the questions in this section in the spaces provided.

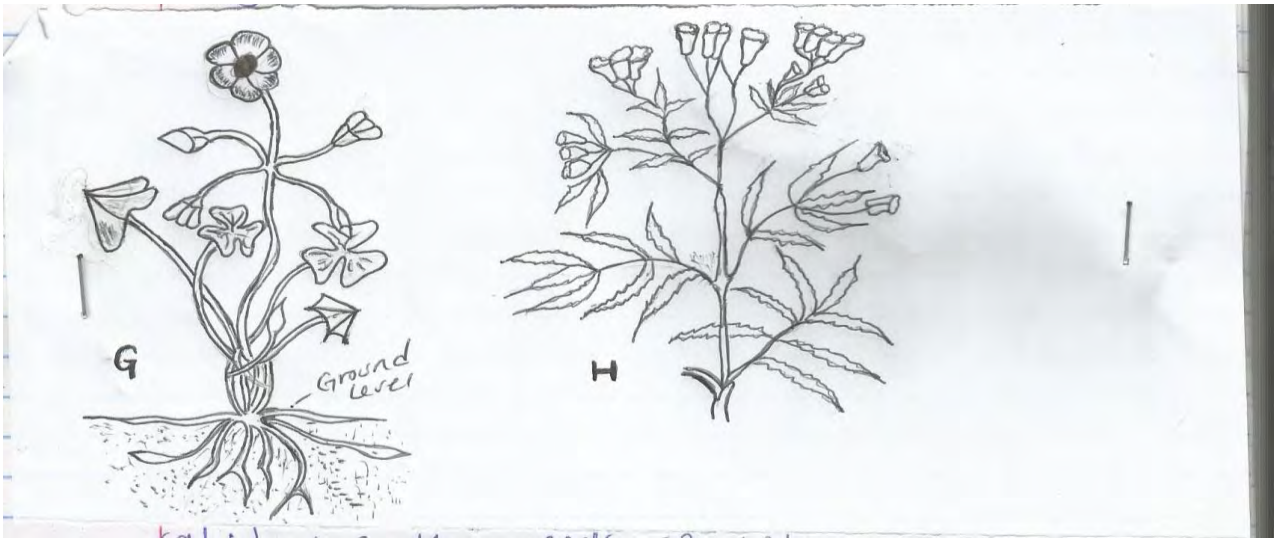
16. a) A farmer is to carry out farming in a soil that requires 50kg P_2O_5 and has a fertilizer labelled 20:30: 0. How much fertilizer does he require. (4mks)
    b) What is the percentage of P_20_5 in the fertilizer. (1mk)

17. The diagram labelled A, B, (i) and (ii) below illustrates materials and methods Of vegetative propagation. Study them and answer the questions that follow.



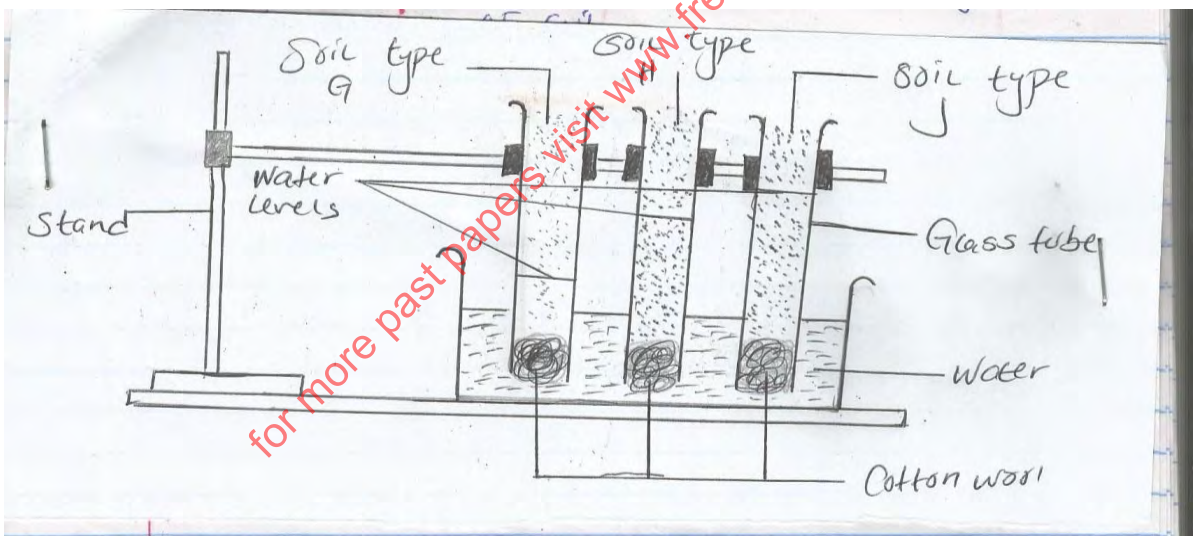
   a) Name the parts labelled A and B. (2mks)
   b) Give the reason for carrying out practice C in diagram (i) (1mk)
   c) Name the methods of propagation illustrated in diagrams
   i) and (ii) (2mks)

18. Diagrams G and H below show some weeds.



a) Identify the weeds. (2mks)
b) State one economic importance of weed H. (1mk)
c) Why is it difficult to control weed G. (1mk)
d) Name an example of a systemic herbicide which can be used to control weed G. (1mk)

19. The diagram below shows an experiment set up using soil types G, H and J to investigate a certain property of soil.



a) Identify the property being investigated. (1mk)
b) Name the three soil types. (3mks)
c) What conclusion can be drawn from the above experiment. (1mk)

SECTION C: (40 MARKS)

Answer any two questions in this section in the spaced provided.

20. a) Name four types of soil erosion by water. (4mks)
b) Explain eight factors influencing soil erosion. (16mks)

21. The following is a farm record which Mr. Kamau had kept on 30th June 2008. Study it carefully and answer the questions that follow.

	Ksh.
Cash in hand	20,000
Cash at bank	66,000
Buildings	50,000
Disc plough	16,000
Debtors	16,000
Working tools	12,000
Bank overdraft	24,000
Creditors	20,000
Loan	50,000
Cattle	40,000
Land	80,000

i) Prepare the balance sheet from the above information for Mr. Kamau's farm. (6mks)
ii) State wether Mr. Kamau's farm business is solvent or insolvent. (1mk)
iii) State three benefits of the balance sheet to Mr. Kamau. (3mks)

b) Explain five risks and uncertainties in farming. (10mks)

22. a) Describe the cultural methods of weeds control in crop production. (10mks)
b) Describe the harmful effects of pests on crops (10mks)

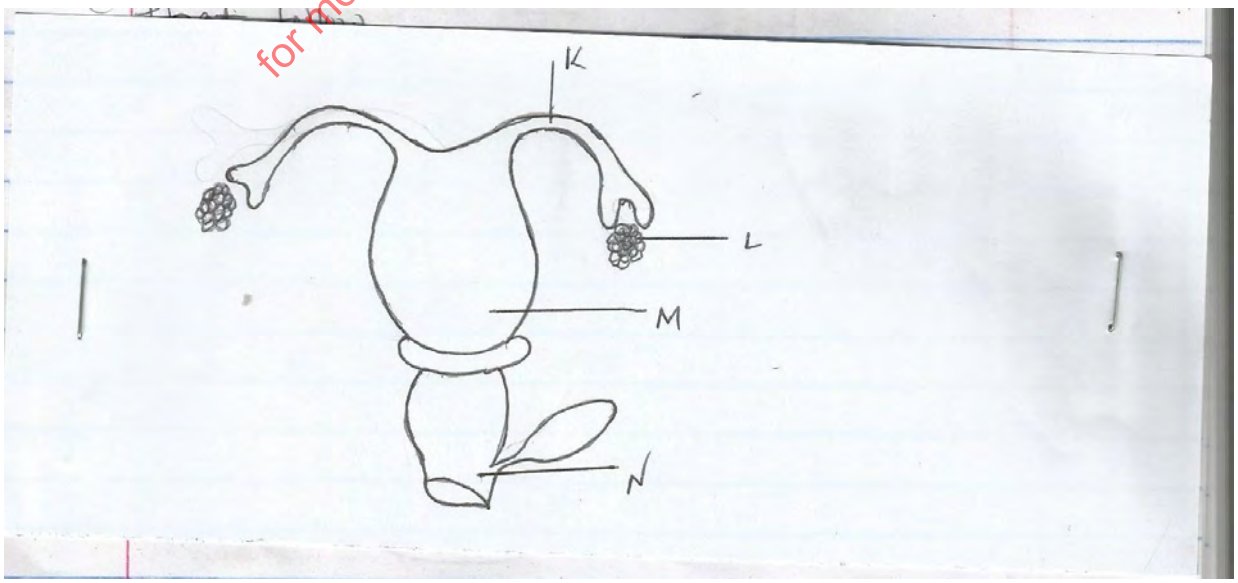
END OF 2ND TERM – 2018
AGRICULTURE F.4 PP2 EXAM
July
SECTION A:(30 MARKS)

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

1. State four importance of keeping livestock healthy. (2mks)
2. Distinguish between the following practices as used in livestock production.
   a) Crutching and ringing in sheep management. (2mks)
   b) Steaming up and flushing. (2mks)
3. State three observable features that help to differentiate the Dromedary camel from the Bactrian camel. (1 ½ mks)
4. Name two functions of the crop in digestive system of chicken. (1mk)
5. a) Give three reasons for candling eggs in poultry production. (1 ½ mks)
   b) State three qualities of the shell that should be considered when selecting eggs for incubation. (1 ½ mks)
6. Give four predisposing factors to mastitis in dairy cattle (2mks)
7. Outline four mechanical methods of controlling ticks. (2mks)
8. State four structural features of ideal calf pen. (2mks)
9. Give two problems associated with tractor hire services. (1mk)
10. Give the functions of following farm tools and equipments. (2mks)
    i) Sickle
    ii) Strip cup
    iii) Claw hammer
    iv) Mason's trowel
11. State four properties of a good vaccine. (2mks)
12. Give four factors that affect digestibility of feeds in animals. (2mks)
13. Outline four farm structures that are necessary for handling dairy animals. (2mks)
14. Give three ways in which farmers market beef cattle in Kenya. (1 ½ mks)
15. List four farm implements attached to power take off (PTO) (2mks)

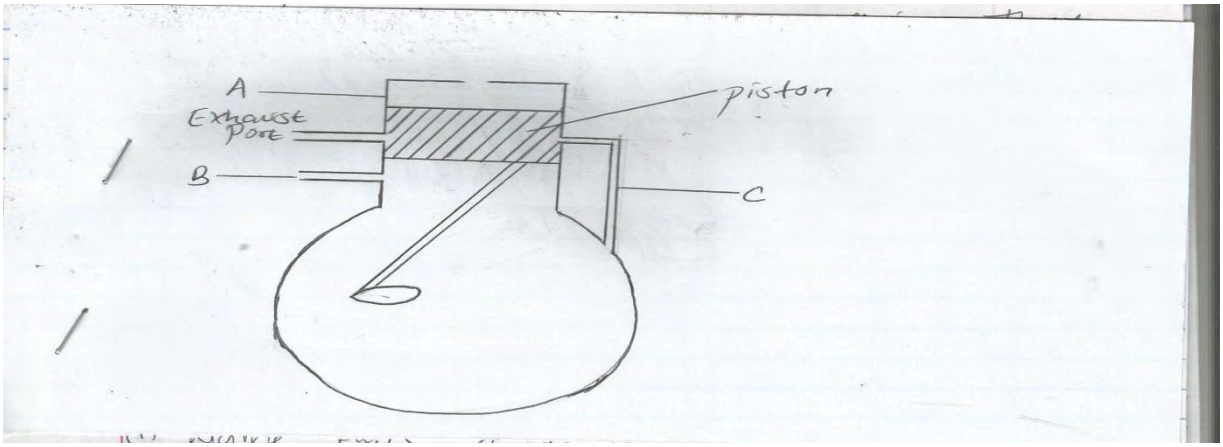
SECTION B: (20MKS)
Answer all the questions in this section in the spaces provided.

16. a) A dairy farmer is required to prepare 100kg of dairy meal containing 20% Digestible crude protein (D.C.P) using the pearson's square method, calculate the quantity of soya bean (40% DCP) and rice (16% DCP) the farmer requires for the dairy meal (4mks)
    (show your working)
    b) Name one other method that can be used to compute livestock ration. (1mk)
17. The diagram below shows the female reproductive system of a cow. Use it to answer the question that follow.



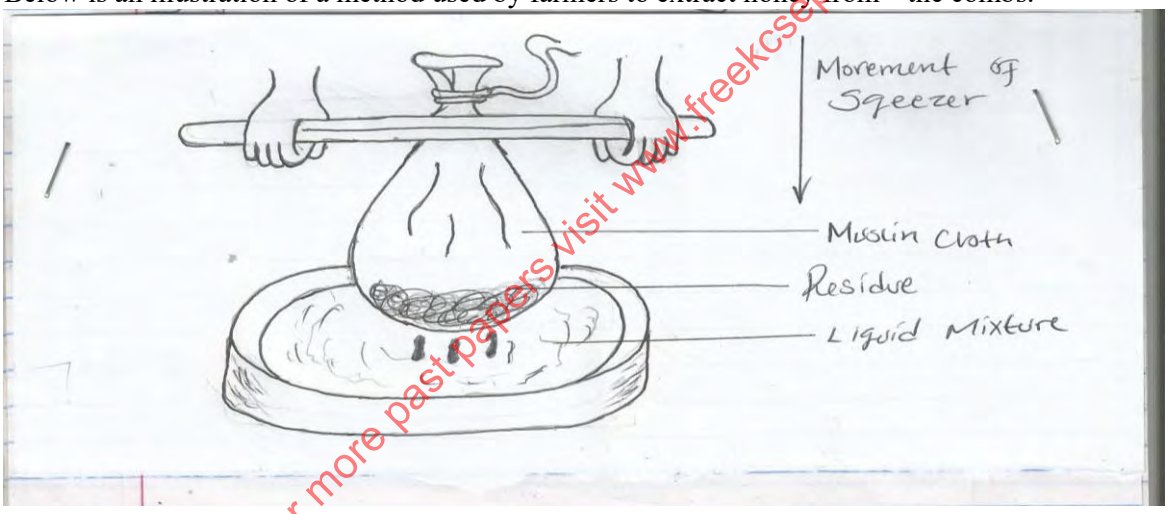
a) Name the parts labelled K, L,M and N. (2mks)
b) Give the functions of the parts labelled K, L and M. (3mks)

18. The diagram below illustrates a two – stoke



i) Name parts A, B and C. (3mks)
ii) Identify the stroke shown above. (1mk)
iii) Indicate on the diagram using letter X where compression of fuel Mixture occur. (1mk)

19. Below is an illustration of a method used by farmers to extract honey from the combs.



a) Identify the method. (1mk)
b) Name any other methods that can be used to process honey. (1 mk)
c) Describe briefly how the method illustrated above is carried out on the farm. (3mks)

SECTION C:(40 MARKS)
Answer any two questions in this section in the spaces provided.

20. a) Describe parts and functions of a plunge dips. (14mks)
b) State six advantages of live fences. (6mks)
21. a) Describe the management of one day old chicks in a brooder until they are eight weeks. (12mks)
b) Explain four causes of cannibalism in poultry production. (8mks)
22. a) Describe newcastle disease under the following sub – headings.
i) Causal organism (1mk)
ii) Signs of infection (7mks)
iii) Control measures. (2mks)
b) Explain five factors to consider when selecting a breeding stock. (10mks)

MARKING SCHEME

CEKENA MOCK
AGRICULTURE
443/1
JULY/AUGUST

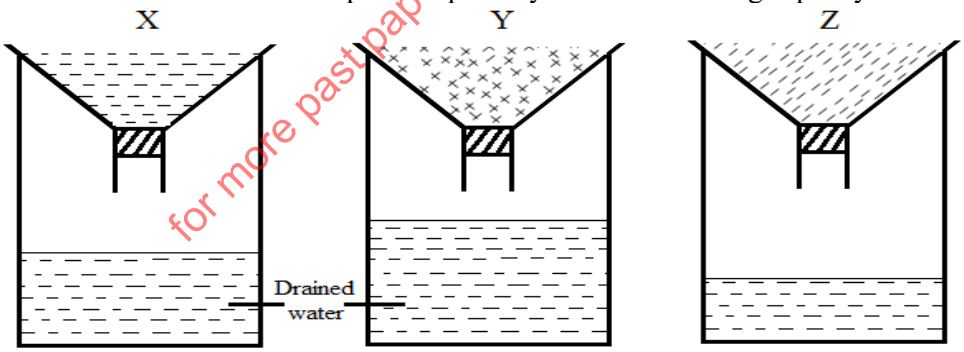
SECTION A (30 MARKS)

1. Differentiate between livestock farming and arable farming. (1mk)
2. State four characteristics of intensive farming. (2mks)
3. List two aspects of light that influence agriculture. (1mk)
4. State two biotic factors that are useful in agricultural production. (1mk)
5. Mention two conditions when opportunity cost is zero in a farm enterprise. (1mk)
6. Give four reasons why it is important to stake tomatoes. (2mks)
7. List four types of land reforms that have taken place in Kenya. (2mks)
8. Distinguish between seed dressing and seed inoculation. (1mk)
9. State two methods of utilizing sorghum as a forage crop. (1mk)
10. State what is meant by ‗trap crop' in crop pest control. (1mk)
11. Give two benefits of border planting form of agroforestry to a farmer. (1mk)
12. Give four ways by which water pollution can be reduced or controlled. (2mks)
13. a) What is biological weed control? (1mk)
    b) State two advantages of biological weed control. (1mk)
14. a) State two functions of sulphur in plants (1mk)
    b) Give four signs that could enable a farmer to identify compost manure that is ready. (2mks)
15. List four farming practices that may help to achieve minimum tillage on a farm. (2mks)
16. Explain the following terms. (3mks)
    a) Hardening-off
    b) Seedling bed
    c) Pricking out
17. Mention two sources of capital used by farmers. (1mk)
18. a) What is the meaning of the term ‗utility' in farming? (1mk)
    b) State four uses of gross margin analysis on a farm business. (2mks)

SECTION B (20 MARKS)

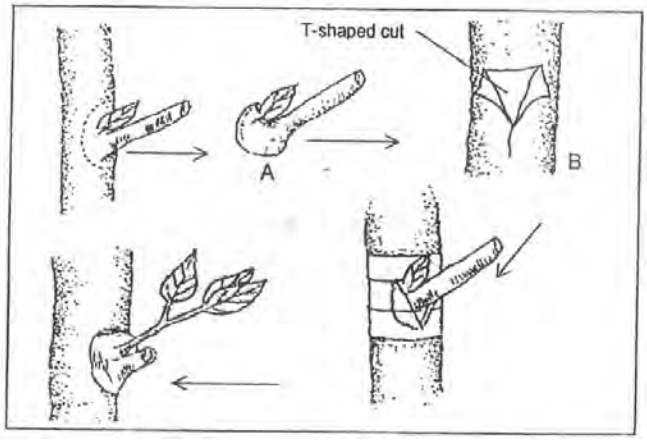
Answer all questions in this section

19. The experiment below was set to compare the porosity and water holding capacity of three different types of soils.



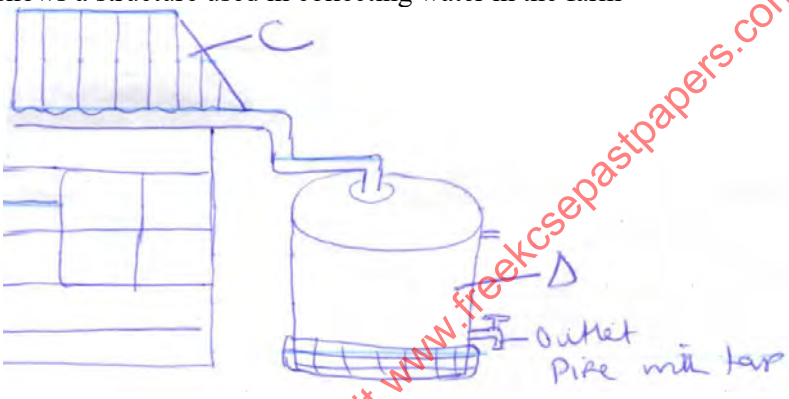
i) Identify the soils in each of the following funnels labeled. X & Y (1mk)
ii) Which of the type of soil can be said to have the highest porosity rate? (1mk)
iii) Give reasons for your answer. (1mk)
iv) Which type of soil would be suitable for planting paddy rice? (1mk)
v) Explain your answer in (iv) above. (1mk)

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



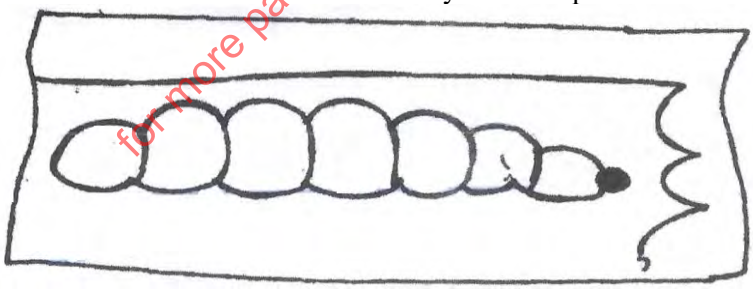
a) Name the practice in the diagram above (1mk)
b) Identify parts A and B (2mks)
c) Give four advantage of the operation shown on the diagram above in crop production. (2mks)

21. The diagram below shows a structure used in collecting water in the farm



a) Identify the method of collection above. (1mk)
b) Give three factors that will determine the amount of water collected in the structure labeled D. (1 ½ mks)
c) Outline two maintenance practices that one should carry out on part labeled C above. (1mk)
d) Name three other methods used in collecting water in the farm. (1 ½ mks)

22. The diagram below shows a maize stalk infected by a certain pest. Observe it and answer the questions that follow.



a) Identify the pest in the diagram above. (1mk)
b) Give two damages caused by the pests indentified in (a) above. (2mks)
c) Other than maize name other crops attacked by the pest (a) above. (1mk)
d) Give two cultural measures for the pest (a) above. (1mk)

SECTION C

Answer two questions in this section.

23. a) A farmer has 30 hectares of arable land, 20 hectares of which is planted with maize and 10 hectares with grass hay. He wishes to replace 10 hectares of maize with irish potatoes next year. The fertilizer rate will have to be increased from 2 bags per hectare for maize to 4 bags per hectare of potatoes. As a result of the change, extra 40 men days of manual labour per hectare will be necessary at the rate of Kshs, 100 per man per day. The average yield per hectare of maize is 35 bags and for potatoes 120 bags. The price paid is Ksh. 1,000 per bag of maize and 600 per bag of potatoes. Maize seed cost Ksh. 750 per hectare and potatoes cost Kshs. 800 per hectare. Fertilizer costs are 650 per hectare.

i) Draw up a partial budget for the farmer. (8mks)
ii) Advise the farmer accordingly. (2mks)

b) Describe the importance of the following management practices in growing cabbages.
i) Top dressing (2mks)
ii) Weed control (2mks)
iii) Pest control (2mks)
iv) Disease control (2mks)
v) Harvesting (2mks)

24. a) Explain ten effects of strong wind on crop production. (10mks)
b) Describe ten cultural or biological methods of controlling soil erosion. (10mks)

25. a) Explain five principles that should be considered when planning a crop rotation programme (10mks)
b) i) Explain five factors that determines the time of harvesting. (5mks)
ii) Explain five effects of liberalization of farming in Kenya. (5mks)

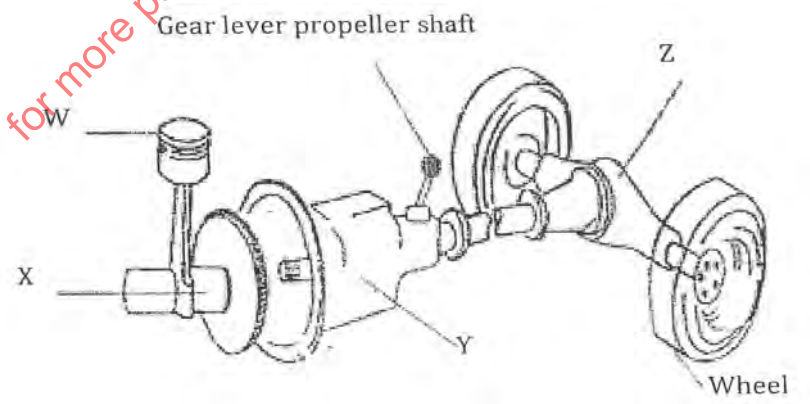
AGRICULTURE
443/2
FORM IV
JULY/AUGUST

SECTION A (30 MARKS)

1. Give two reasons of flushing in sheep management (1mk)
2. Give any two demerits of electricity as main source of power in the farm. (1mk)
3. Which equipment is used to measure specific gravity of milk. (1mk)
4. Name the breeding system by;
   a) Mating a Friesian bull with Zebu cow. (1mk)
   b) Mating a Jersey cow from Kenya with a Jersey bull from Europe. (1mk)
5. Name four breeds of dairy goats. (2mks)
6. State two factors that could lead to failure to conceive in sows after service. (1mk)
7. State four advantages of bucket feeding method in calves. (2mks)
8. List four viral diseases of livestock. (2mks)
9. Give two pairs of tools that must be used together in livestock production. (2mks)
10. Outline four factors that determine the nutritional requirements of an animal. (2mks)
11. Give the mineral deficiency of the following nutritional disorders in livestock nutrition. (4mks)
    i) Anaemia
    ii) Osteomalacia
    iii) Goitre
    iv) Curled toe paralysis
12. Give four practices carried out on fish before preservation. (2mks)
13. Name the parts of the digestive system of poultry that act as the stomach. (1mk)
14. Differentiate between the following terms. (4mks)
    i) Digestion and digestibility
    ii) Forage crops and fodder crops
15. Which hormone stimulates milk let down in cows? (1mk)
16. Distinguish between castration and caponisation (2mks)

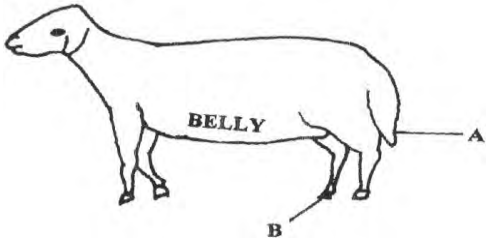
SECTION B
Answer all questions in this section.

17. The diagram below shows part of the power transmission system of a tractor. Study it carefully and answer the questions below.



   Name the parts labeled W and Y (1mks)
   a) State the functions of the parts X and Z (2mks)
   Name two ways in which the power is transmitted from the engine. (2mks)

18. A diagram of a sheep is shown below. Study the diagram and answer the questions that follow.



i) What operation is usually carried out on the part labeled A? (1mk)
ii) Give two reasons for carrying out the operation stated in a (i) above? (1mk)
iii) At what age should the operation in a (i) above be carried out? (1mk)
iv) Give two methods of carrying out the operation in a (i) above. (2mks)

19. Below is an illustration of an internal parasite in livestock.

a) Identify the parasite (1mk)
b) Name one final host for the parasite. (1mk)
c) Name the intermediate host for the parasite. (1mk)
d) State two measures used to control the parasite. (2mks)

20. The following is an illustration of a chick suffering from malnutrition

a) Identify the mineral deficiency shown by the chick. (1mk)
b) Apart from the symptom illustrated above, give three other symptoms of mineral deficiency in poultry. (3mks)
c) Suggest a method of controlling the disorder above. (1mk)

SECTION C

Answer two questions in this section

21. a) Describe the digestion of grass in the rumen of a ruminant. (10mks)
b) Describe five maintenance practices that should be carried out on an ox-drawn mould board plough. (5 mks)
c) State five indicators that can be observed on a goat to confirm sickness. (5mks)

22. a) Describe the procedure followed when hand spraying cattle to ensure effective use of acaricides to control ticks (10 mks)
b) What are the advantages of a four stroke cycle engine. (5mks)
c) Explain the maintenance practices of a cattle dip (5mks)

23. a) Explain the uses of various hand tools in the construction of a bee hive. (10 mks)
b) Give five disadvantages of free range system of rearing poultry (5mks)
c) Explain the different methods used to stimulate milk let down in a lactating cow when milking (5mks)

SECTION A (30 MARKS)

1. State four soil factors that may influence the crop grown by a farmer. (2mks)

2. State four problems that would be experienced by a farmer for persistent use of herbicides in crop production. (2mks)

3. Outline four environmental factors which favour the population of pests in a given locality. (2mks)

4 **a)** What is land reform? ..... (½ mk)

b) Name three practices of land reform in Kenya today. (1½mks)

5 **a)** What is elasticity of demand? ..... (½ mk)

b) Give three reasons why an agricultural commodity may be price in-elastic. (1½ mks)

6. **a.**Differentiate the following.

i) Topping from Top dressing in pasture management. (1 mk)

ii) Itinerant Traders from broker agents (1 mk)

iii) Weir from a Dam in soil and water management. (1 mk)

iv) Agro-silviculture from Agro-silvopastoral. (1 mk)

7. Give two reasons for carrying out rogueing in a crop field. (1 mk)

8. **a.** What is a soil sample? (½ mk)

b) Outline three activities that are carried out during soil sampling. (1½mks)

9. List down two maintenance practices of sub-surface irrigation. (1mk)

10 **a)** State the law of equimarginal returns in a production process. (½mk)

b) State three un-desirable effects of weeds in pastures. (1½mks)

11. Given that tomatoes are planted at a spacing of 60cm by 30cm. Calculate the plant population in a plot of land measuring 12m by 9m. Show your working. (2mks)

12 **a)** What is labour peak in the farm? ..... (½ mk)

b) State three ways in which labour peaks can be overcome in the farm. (1½mk)

13 **a)** What is a land title deed? .....

b) State four advantages of a land title deed to a farmer. (2mks)

14. Calculate the amount of P_2O_5 contained in 200kg of a compound fertilizer 25:10:5 (2 mks)

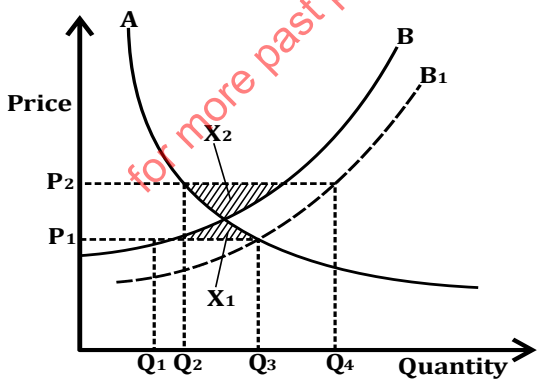
15 **a)** What is a farm budget? (½ mk)

b) State three benefits of budgeting to a farm manager. (1½ mks)

SECTION B (20 MARKS)

Answer All the questions in this section

16. Alongside is a graph showing the relationship between two market forces represented by curves A and B in price determination. Study the graph carefully and answer the questions below.



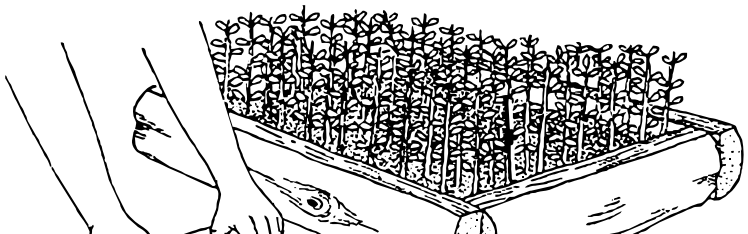
a) **i)** Name the curves labelled A and B. (1mk)

ii) Give the name, and state the significance of the point where curves A and B intersect. (1mk)

iii) Outline the significance of the areas shaded X_1 and X_2. (1mk)

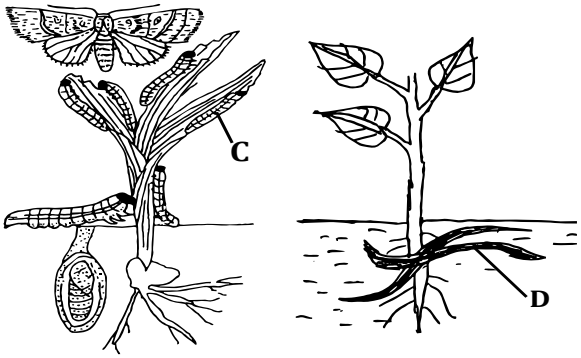
b) Outline two factors that could shift curve B to B_1 in a perfect market. (1mk)

17. The diagram shows a nursery management practice carried out on seedlings. Study it carefully and answer the questions that follow:-



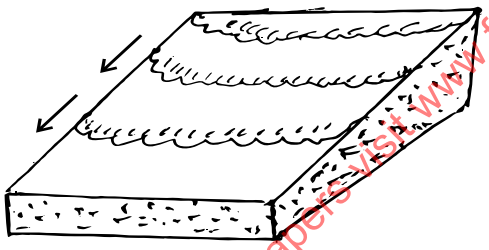
a) Identify the management practice. (1mk)
b **i)** Why is it necessary to carry out the above practice? Give <u>two</u> reasons. (2mks)
ii) State <u>one</u> problem associated with the above practice. (1mk)

18. The illustrations represent two plants attacked by pests. Study them carefully and answer the questions that follow:-



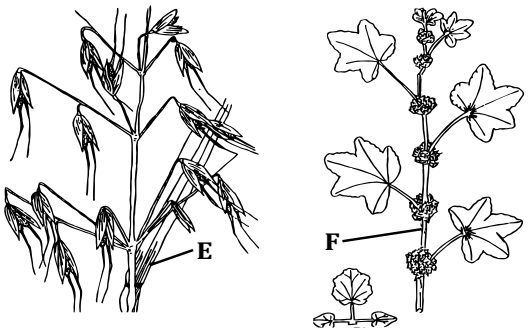
a) **i)** Identify pests C and D (1 mark)
ii) Outline the most likely damage that can be caused by pests C and D. (1mk)

19. The diagram illustrates a type of erosion. Carefully study it, and answer the questions that follow:-



a) Identify the type of erosion. (½mk)
b) **i)** Name the best <u>two</u> structures used in controlling the above type of erosion. (2mks)
ii) Outline <u>three</u> effects of the above type of erosion in the farm. (1½mks)

20. The diagram below represents weeds. Study them carefully and answer the questions that follow.



a) Identify the weeds labelled E and F. (1mk)
b) **i)** Give <u>two</u> reasons why weed E is more harmful in a field of wheat than weed F. (2mks)
ii) State the significance of weed F in livestock production. (1mk)

SECTION C (40 MARKS)

Answer any TWO questions from Section C

21 **a)** Outline the principles governing co-operative societies in Kenya. (5mks)

b) Name and explain methods of fertilizer application. (5mks)

c) Discuss the common micro-catchments used in soil and water conservation in tree crops. (5mks)

d) Explain the importance of a balance sheet in a farming business. (5mks)

22. Describe the production of tomatoes under the following headings.

a) Nursery preparation. (12 mks)

b) Transplanting (5mks)

c) Field management practices. (3mks)

23. Maboga farm started the year on 1: 2011 and as at 31. 12. 2011, had the following transactions.

	Kshs.
Sales of poultry	5,000.00
Opening valuations	10,000.00
Purchase of seeds	2,800.00
Purchase of fertilizers	2,000.00
Sales of Beans	1,200.00
Sales of vegetables	500.00
Closing valuations	15,000.00
Casual laborers (wages)	2,500.00
Depreciation (Tractors)	500.00
Interest (Borrowed loan)	400.00
Purchase of day old chicks	800.00
Sales of milk	6,000.00
Purchase of calves	10,000.00
Miscellaneous Expenses	1,000.00

a) Prepare a profit and loss Account for Maboga farm. (10mks)

b) Did the farm qualify for credit? Give one reasons. (2mks)

c) Describe the procedure followed during ensiling. (8mks)

WESTSCENT EXAMINATION
Agriculture
Paper 2
July 2018

SECTION A (30 MARKS

1. Give the name used to describe the following animals. (1½mks)
i) Pig that has given birth several times.
ii) Castrated male bird (domestic fowl)
iii) A young one of a rabbit after birth.

2. Name the breed of a dairy cow with light yellow colour, to a shade of black, protruding black eyes with a black muzzle and tail switch. (1mk)

3. Name the intermediate host of the following. (1mk)
i) Taenia saginata .....
ii) Fasciola gigantica .....

4 a) State one use of each of the following farm tools. (1mk)
i) Mallet .....
ii) Elastrator .....
b) State the functional difference between a marking gauge and mortise gauge. (1mk)
c) State four problems associated with a farmer who does not maintain his farm tools and equipments.

5. Outline four duties of a water bee in a bee colony. (2mks)

6. State four causes of infertility in dairy cattle. (2mks)

7. Outline four factors that determine the nutritional requirement of cattle. (2mks)

8. State four practices that can be carried out to control egg breaking and drinking by birds in a deep litter system. (2mks)

9. Why is it necessary to weigh piglets immediately after farrowing and weaning? Give four reasons. (2mks)

10. List four specific symptoms of east coast fever diseases in cattle. (2mks)

11. State four disadvantages of wind power. (2mks)

12. Name two methods of timber treatment. (2mks)

13. State four disadvantages of using thatch as roofing material. (2mks)

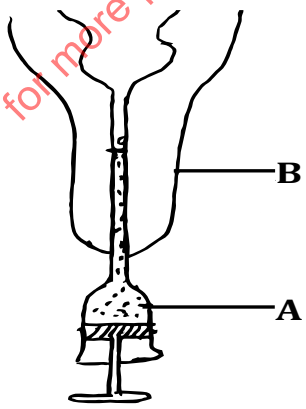
14 a) What is depreciation in farm tools & equipments. (½mk)
b) State two possible causes of depreciation in farm tools and equipment. (1mk)

15. Name four components of the ignition system in a tractor engine. (2mks)

16. Why is it necessary to feed young mammals with colostrum for the first two weeks after birth? Give three reasons. (1½mks)

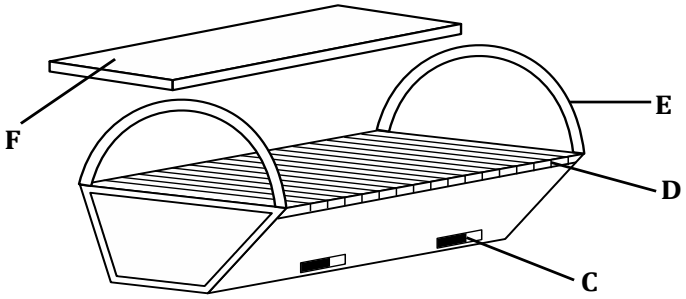
SECTION B (20 MARKS)

17. The diagram below represents a routine practice carried out on dairy animals.



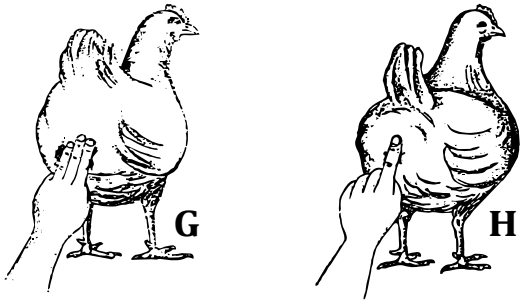
a) Identify the practice illustrated above. (½mk)
b) i) Name the material labelled A in the illustration above. (1mk)
ii) Give three reasons why its necessary to apply milking jelly in the part labelled B. (1½mks)

18. Below is a diagram of an equipment used in agriculture. Study it carefully and answer the questions that follow.



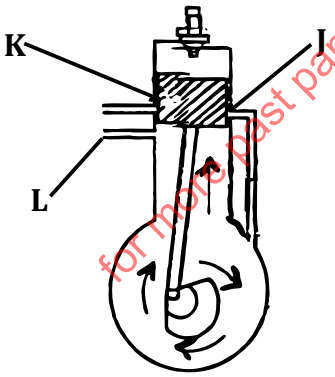
a) Identify the equipment. (1mk)
b) Name the parts labelled C, D E. (1½mks)
c) **i)** State one role played by the parts labelled C, D, E and F (4mks)
ii) Name other two types of equipments which serve the same function as the one illustrated above. (1mk)

19. The diagram below represent a practice carried on birds.



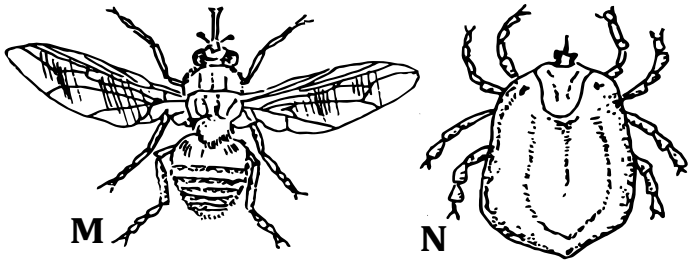
a) State the purpose of the practice. (½mk)
b) Identify with a reason which of the two birds is desirable. (1mk)

20. The diagram below represent a stroke in a two stroke cycle Engine. Study it carefully and answer the questions that follow.



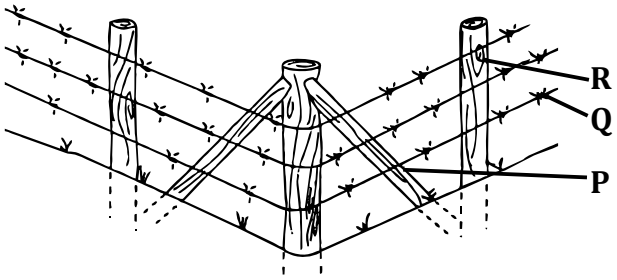
a) **i)** Identify the stroke. (½mk)
ii) Name the parts labelled J, K and L. (1½mks)
b) State what is happening in the parts labelled K and L during this stroke. (1mk)

21. The diagrams below represent common parasites in livestock production. Study them carefully and answer the questions that follow.



a) Identify the parasites labelled M and N. (1mk)
b) **i)** Name <u>one</u> disease transmitted by parasites M and N in livestock production. (1mk)
ii) Outline <u>one</u> non-chemical methods of controlling parasites M and N. (1mk)

22. The diagram below represents a part of fence in a farm. Study it carefully and answer the questions that follow.



a) Identify the part of the fence represented. (½mk)
b) **i)** Name the parts labelled P and Q. (1mk)
ii) State <u>three</u> disadvantages of the type of the fence represented above. (1½mks)

SECTION C (40 MARKS)

23 **a)** Compare the use of an-oxen drawn plough with a tractor drawn mouldboard plough. (10 mks)
b) Outline the procedure followed in establishing the foundation of a permanent farm building. (10 mks)

24. Describe the rearing of layers in a deep litter system from the point of lay. (20mks)

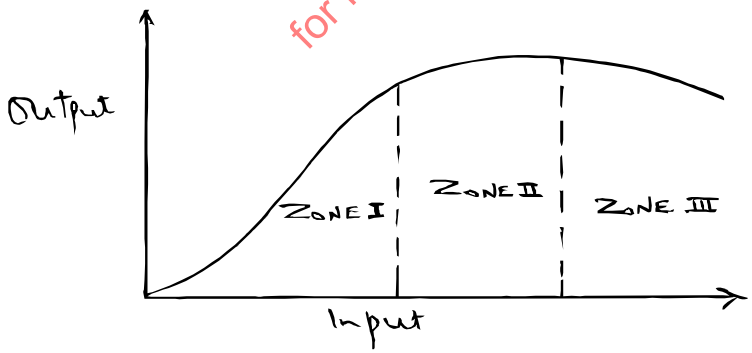
25 **a)** **i)** Describe the life cycle of tapeworms. (8mks)
ii) State and describe two measures of controlling tapeworms. (2mks)
b) State and describe the general measures undertaken to control livestock diseases. (10mks)

KANGEMA
443/1
AGRICULTURE
Paper 1

SECTION A (30 marks)
Answer ALL questions in this section on the spaces provided.

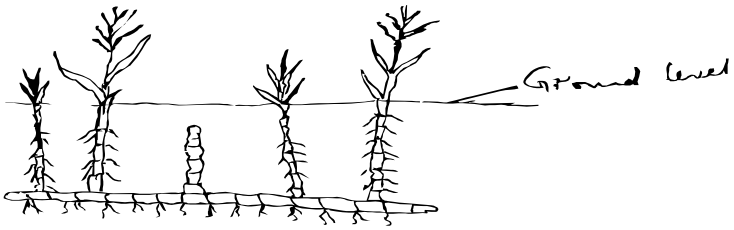
1. State two reasons for root trimming in a tree nursery. (1 mark)
2. Give two forms in which nitrogen is absorbed from the soil by plants. (1 mark)
3. State four financial documents that should be kept on farm. (2 marks)
4. State four ways in which burning of vegetation may lead to loss of soil fertility. (2 marks)
5. Give two for locating a nursery bed in a well sheltered place. (1 mark)
6. List down four methods of treating water for use on the farm. (2 marks)
7. Give two examples for each of the following categories of water pipes.
   a. Metal pipes. (1 mark)
   b. Hose pipes. (1 mark)
8. Give two ways in which cover crops help to conserve water in the soil. (1 mark)
9. The following are different types of costs used during production :
   Rent ; wages of casual labour ; fuel costs; salaries of permanent labour.
   Categorize the cost in to :
   a. Fixed costs. (1 mark)
   b. Variable costs. (1 mark)
10. What is the function of each of the following during water treatment.
    a. Soda ash (1 mark)
    b. Alum (1 mark)
    c. Chlorine (1 mark)
11. State four importance of agroforestry in the farm. (2 marks)
12. a. Give two conditions in agricultural production under which opportunity cost is zero. (1 mark)
    b. Apart from opportunity cost, mention two other basic concepts of economics. (1 mark)
13. State two ways in which agriculture contributes directly to industrial development. (1 mark)
14. State four advantages of mixed farming. (2 marks)
15. Give four importance of ridging in crop production. (2 marks)
16. Name four elements whose deficiency causes chlorosis in plants. (2 marks)
17. Differentiate between consumable goods inventory and permanent goods inventory. (2 marks)

SECTION B (20 marks)
Answer All the questions.
18. Below is a graphical representation of an economic law.



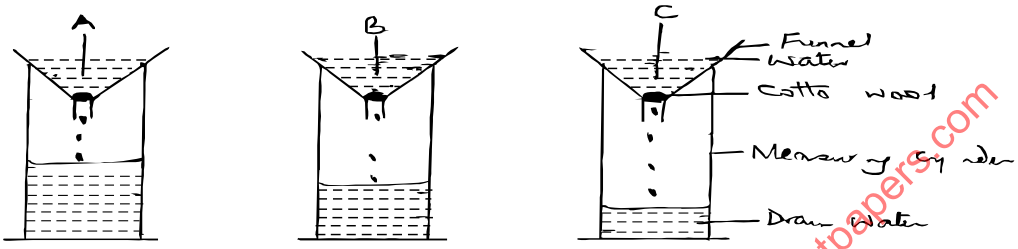
    a. Identify the law illustrated above. (1 mark)
    b. Explain what happens in each of the zones in relation to output. (3 marks)
       Zone I
       Zone II
       Zone III
    c. Which of the three is the rational zone of production. (1 mark)

19. The diagram below illustrates a common weed that inhabits both arable and pasture land.



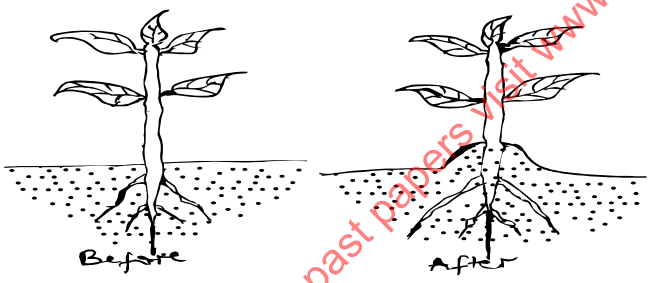
a. Identify the weed illustrated above. (1 mark)
b. Classify the above weed according to :
   i. Growth cycle (1 mark)
   ii. Plant morphology. (1 mark)
c. Give two appropriate methods of controlling the above weed. (2 marks)

20. The diagram below illustrates an experiment on soil. Study it carefully and answer the questions that follow.



a. State the aim of the experiment. (1 mark)
b. If the amount of water added in each soil was the same, identify the soil samples A, B and C. (3 marks)
c. State two ways in which the soil structure of the soil sample C can be improved. (2 marks)

21. Below is an illustration of a field practice carried out during crop production.



a. Identify the practice illustrated above. (1 mark)
b. Citing a crop in each case, give three importance of the above practice in crop production. (3 marks)

SECTION C **40 marks)**

Answer two questions from this section. All questions carry equal marks.

22. a. Explain five advantages of mulching in crop production. (5 marks)
    b. Outline five activities that may be undertaken in organic farming. (5 marks)
    c. Give five benefits of using vegetative propagation in production of citrus. (5 marks)
    d. Describe five management practices carried out on pasture. (5 marks)
23. a. Describe eight farming practices that encourage soil erosion. (8 marks)
    b. Explain five groups of pesticides based on the mode of action. (5 marks)
    c. i. Describe procedure of harvesting pyrethrum. (4 marks)
       ii. Explain precautions that should be observed during the harvesting of pyrethrum. (3 marks)
24. a. Describe eight principles that govern the running of co-operatives. (8 marks)
    b. Describe carrot production under the following sub-headings :
       i. Field management practices. (5 marks)
       ii. Harvesting. (2 marks)
    c. Outline five practices used to control maize streak disease. (5 marks)

Date

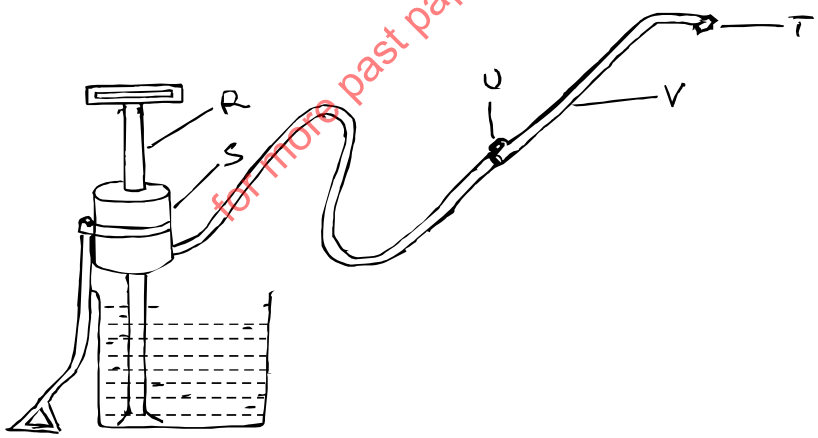
KANGEMA
443/2
AGRICULTURE
Paper 2

SECTION A (30 marks)
Answer ALL questions in this section on the spaces provided.

1. List four tools used in laying concrete blocks in construction of a wall. (2 marks)
2. Give two reasons why farmers prefer to keep hybrid birds to pure breeds. (1 mark)
3. Differentiate between notifiabbe disease and zoonotic disease. (2 marks)
4. Outline any four signs of infestation by external parasites in livestock. (2 marks)
5. State four factors that determine nutritional requirements in dairy goats. (2 marks)
6. Give four advantages of artificial insemination. (2 marks)
7. Outline four importance of castration in male animals. (2 marks)
8. State the function of each of the following tools in bee handling.
   a. Bee bush (1 mark)
   b. Hive tool (1 mark)
   c. Hive knife (1 mark)
9. State four properties of concrete that make it suitable for constructing farm buildings. (2 marks)
10. Give two reasons why maintenance of farm structure is important. (1 mark)
11. Name two non - contagious protozoa diseases of livestock. (1 mark)
12. State four signs of foot rot in sheep. (2 marks)
13. List four factors a farmer should consider when grading eggs for marketing. (2 marks)
14. Outline four routine management practices carried out in female calves. (2 marks)
15. Give four functions of lubricants in an engine. (2 marks)
16. Name the dairy breed of cattle that : (1 mark)
    i. Produces the highest amount of milk per lactation period.
    ii. Produces milk with lowest butter fat content.
17. State two socio-cultural uses of cattle in Kenya. (1 mark)

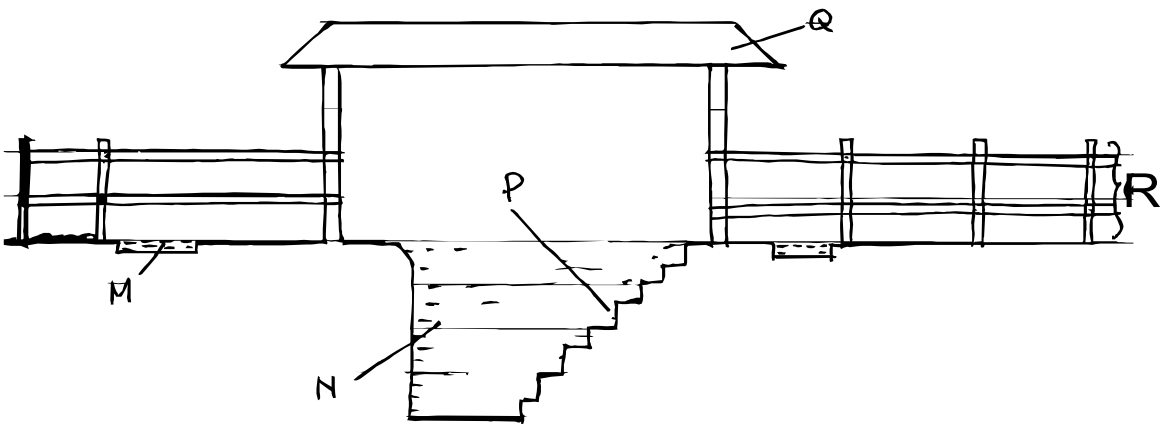
Section B (20 marks)
Answer ALL the questions on the spaces provided.

18. The diagram below shows a farm experiment. Study it and answer the questions that follow.



   a. Identify the experiment. (1 mark)
   b. Give the appropriate use of the equipment above. (1 mark)
   c. Name the part labeled R. (1 mark)
   d. What is the function of the part labeled T.? (1 mark)
   e. Give one maintenance practice of the equipment. (1 mark)
19. Compute 100Kg ration for layers containing 16% DCP using a mixture of maize 8 % DCP and sorghum 8.8 % in the ratio 1:1 and cotton seed cake 24 % DCP. (6 marks)

20. The diagram below shows a livestock handling structure. Study it and answer the questions that follow.



a. Identify the structure above. (1 mark)
b. Identify the parts labeled M, N, P and Q. (4 marks)
c. Give one importance of each of the parts labeled M and P. (2 marks)
d. Give two structural features of the part labeled R. (2 marks)

Section C (40 marks)
Answer any two questions in this section

21. a. Describe short term tractor servicing. (10 marks)
b. Outline the practices carried out in a deep litter poultry rearing system to control diseases and parasites. (10 marks)

22. a. What are predisposing factors of a disease? (1 mark)
b. Describe mastitis under the following sub– headings
i. Causal organism. (1 mark)
ii. Predisposing factors (4 marks)
iii. Symptoms. (4 marks)
c. Describe factors that may necessitate culling in livestock production. (10 marks)

23. a. Describe the management practices that a farmer should carry out to increase milk production in the a yielding herd. (10 marks)
b. Outline general methods of disease control. (5 marks)
c. State and explain five parts of a zero grazing unit. (5 marks)

KIGUMO
443/1
AGRICULTURE
PAPER 1

SECTION A-30 MARKS ANSWER ALL THE QUESTIONS

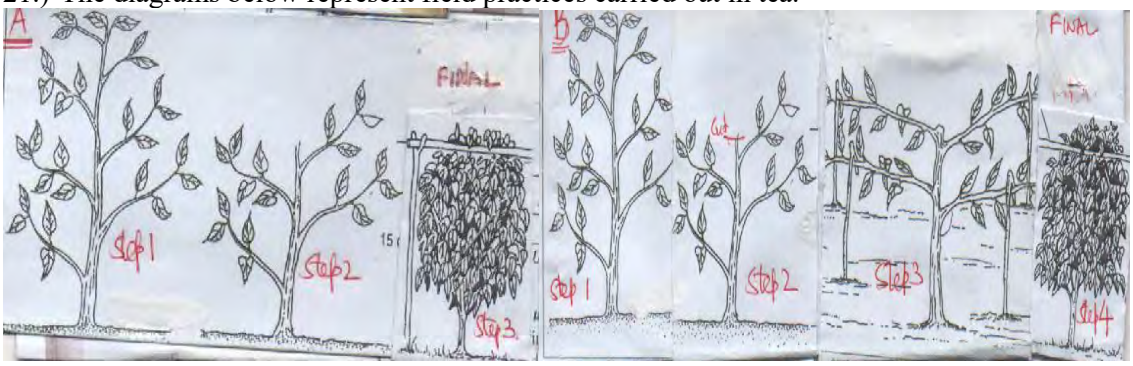
1. List two advantages of practicing mixed farming. (1 mark)
2. Differentiate between aquaculture and apiculture. (1 mark)
3. State four advantages of organic farming in agricultural production. (2 marks)
4. Name four aspects of rainfall that a farmer should consider during selection of a crop to grow in a given area. (2 marks)
5. State four ways through which the amount of light harnessed by a plant can be increased. (2marks)
6. State two disadvantages of superfluous water in the soil during crop production. (1 mark)
7. Give two ways through which cultural beliefs and practices affect agriculture production (2 marks)
8. Mention two ways through which the pH of an alkaline soil can be lowered. (1 mark)
9. State three conditions of land that necessitate land cleaning before primary cultivation (1½marks)
10. List three factors that determine the number of secondary cultivation done. (1 ½marks)
11. Name two methods of soil sampling. (1 mark)
12. State two of advantages of using crowns instead of suckers in pineapple production (1 mark)
13. List down four importance of budding in crop production. (2 marks)
14. State four cultural methods of water and soil conservation. (2 marks)
15. Outline fourharmful effect of weeds in livestock forage production. (2 marks)
16. Give four reasons for land redistribution in Kenya. (2 marks)
17. State four ways in which labour productivity can be improved. (2 marks)
18. Outline three qualities of a good farm manager. (1½ marks)
19. State three functions of National Cereals and Produce Board(NCPB) in Kenya. (1 ½ marks)

SECTION B- 20 MARKS. (ANSWER ALL QUESTIONS)

20. The diagram below shows a nursery practice.

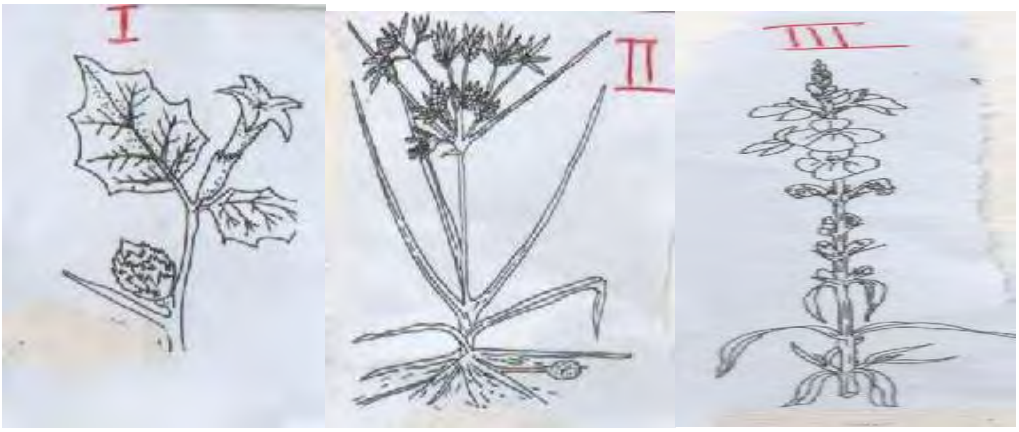
a.) Name the practice shown. (1 mark)
b.) State three advantages of the practice over any other nursery practice. (3 marks)
c.) State the function of L. (1 mark)

21.) The diagrams below represent field practices carried out in tea.



a) Name the method being undertaken in A and B. (1 mark)
b) State two advantages of method B over method A. (2 marks)
c) Name two other ways used to achieve same results as in practice B. (2 marks)

22.) The diagrams below represents various weeds that grow in crop fields. Use the diagrams to answer the questions that follow.



a) Name the weed (1 mark)
b) Give one harmful effect of each of the weeds I, II and III (3 marks)

23.) Mr. MWANGI has 4 hectares of arable land.1.5 hectares are under wheat production,0.5 hectares under maize,0.3 hectare under fodder crops and the rest is under improved grass ley. He wishes to know if replacing 0.3 hectares of maize with potatoes in the following season would be worthwhile.Fertilizer rate would have to be increased from 2 bags per hectare to 2.5 bags per hectare for potatoes and an extra 40mandays of casual labour per hectare would be required for the change. Average yield of maize and potatoes are 56 and 90 bags per hectare respectively. The price of maize is Ksh. 1200 per bag and Ksh. 300 per bag of potatoes. Seed costs Ksh1350 per 10 kg maize and ksh 200 per 50 kg potatoes. DAP fertilizer cost ksh 1400 per 50 kg bag. Labour cost ksh 150 per man day. MWANGI requires 10 bags of potatoes seed and 1 bag of maize to cover 0.3 hectares of land.

a) Draw up a partial budget to determine the effect of the change. (1/2 x8 = 4 marks)
b) State the rational decision he should make basing on your calculations. (1 mark)

SECTION C ANSWER ANY TWO QUESTIONS IN THIS SECTION.

24.) Describethe production of tomatoes under the following subheadings.

a) Transplanting. (10 marks)
b) Field management practices. (10 marks)

25. a) Explain the following terms as used in product-product relationships.
i) Supplementary products. (2 marks)
ii) Complimentary products. (2 marks)
b) Explain seven factors considered during farm planning. (14 marks)

26.) a) Give five ways of controlling water pollution. (10 marks)
b) Explain five problems associated with credit in agricultural production. (10 marks)

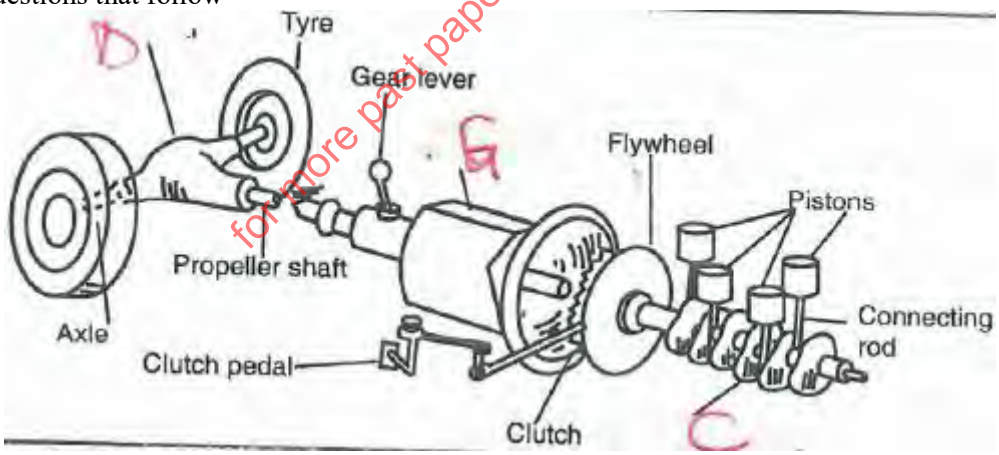
KIGUMO
443/2
AGRICULTURE
PAPER 2

SECTION A 30 MARKS –ANSWER ALL THE QUESTIONS

1.) State **four** factors that affect the distribution of livestock in Kenya. (2 marks)
2.) **Give** examples of each of the following types of livestock animals.
   a) Dairy cattle (1/2 mark)
   b) Dual purpose sheep (1/2 mark)
   c) Hair goat. (1/2 mark)
   d) Dual purpose cattle (1/2 mark)
3.) Name **four** livestock tools that are used together in complimentary manner. (2 marks)
4.) **State** the function of a spoke shave. (1 mark)
5.) State **four** reasons for maintenance practices carried out on masonry tools. (2 marks)
6.) Outline **four** reasons for keeping livestock healthy. (2 marks)
7) State **four** harmful effects of parasites (2 marks)
8) Name **three** methods of selection in livestock production. (1 ½ mark)
9) State **two** signs of parturition in pigs. (2 marks)
10) **Differentiate** between **steaming** up and **flushing**. (1 mark)
11) State **four disadvantages** of using a spray race in controlling parasites in livestock. (2mks)
12) **Outline four** structural requirements of a calf pen. (2 marks)
13) **Differentiate** between **cropping** and **harvesting** as used in **aquaculture**. (1 marks)
14) List **four factors** that influence the choice of poultry rearing system. (2 marks)
15) **Outline four** rules observed when milking. (2 marks)
16) **List four** importance of lubrication system in a tractor. (2 marks)
17) **Outline three advantages** of setting up a biogas unit in a dairy unit. (1 ½ marks)

SECTION B-20marks

18) Use the **Pearson square method** to formulate Duck mash 28% DCP using maize DCP 11% and fishmeal 35% DCP. Show all your working (5 marks)
19) The diagram below represents the **tractor power transmission system**. Study it carefully and answer the questions that follow



   a) **Name three aspects** that ensure maximum traction in a tractor (1 1/2 marks)
   b) Name parts (1 ½ marks)
   c) **state two** functions of part d (2 marks)

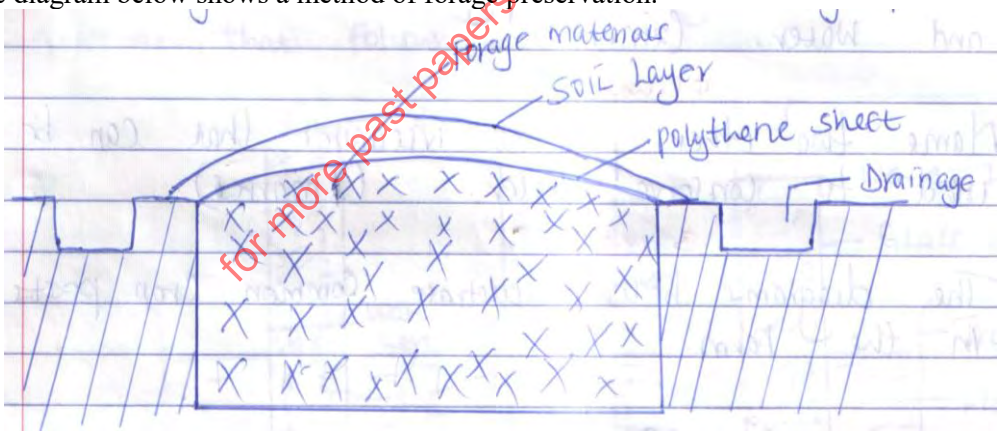
MURANGA SOUTH
443/1
AGRICULTURE
PAPER 1

SECTION A (30 MARKS)
ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. Differentiate between apiculture and aquaculture. 1mk
2. State four details that are contained in a delivery note. 2mks
3. State any two disadvantages of pastoral nomadism system of farming. 1mk
4. Outline two factors that determine the depth of planting. 1mk
5. Give four activities involved in land clearing during land preparation. 2mks
6. Identify four observable indicators of economic development in Kenya. 2mks
7. a) Define the term —Economic injury level" as used in crop protection. 1mk
   b) State four disadvantages of chemical pest control method in crop production. 2mks
8. Mention four ways of increasing labour productivity in the farm. 2mks
9. State four qualities of the mother plant which should be considered when selecting vegetative materials for planting. 2mks
10. State three characteristics of trees for agroforestry. 1 ½ mks
11. State four importances of adding organic matter in the soil. 2mks
12. A farmer was advised to apply 400kg of CAN per hectare while top dressing the maize crop. CAN contain 21% Nitrogen. Calculate the amount of Nitrogen applied in half hectare piece of land. Show your working. 2mks
13. Give four advantages of timely planting. 2mks
14. List four types of records kept by a poultry farmer. 2mks
15. Mention two reasons for grafting. 1mk
16. State four factors that will determine the exact stage and time of harvesting a crop. 2mks
17. a) What is irrigation? (½ mk)
    b) State two conditions under which irrigation is recommended to be used. (1mk)

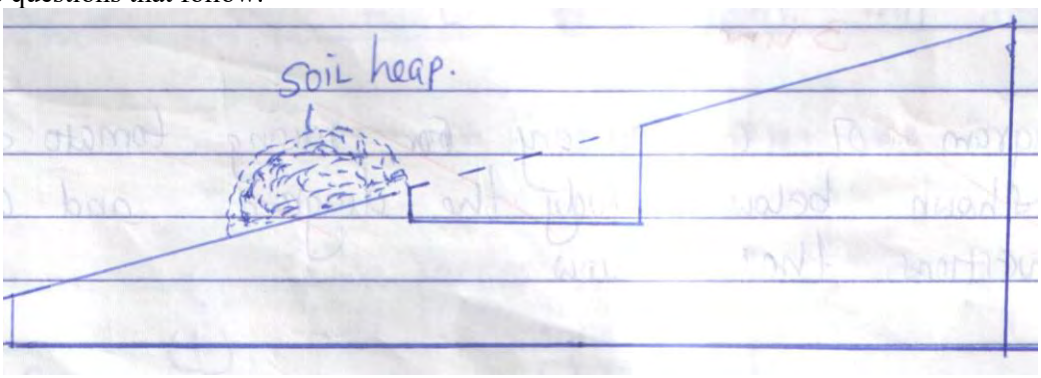
SECTION B (20 MARKS). ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

18. The diagram below shows a method of forage preservation.



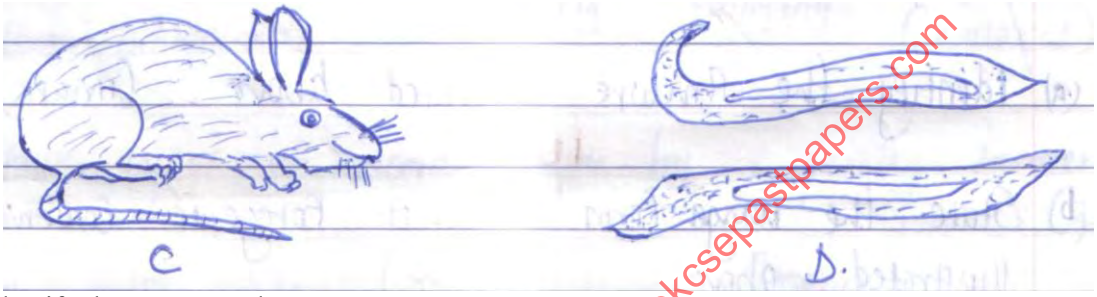
a) Identify the structure illustrated above. 1mk
b) State the form in which forge is conserved as illustrated above. 1mk
c) Give the role of the following in the structure above.
   i) Polythene sheet
   ii) Drainage

19. The illustration below represents a form of physical measures in conservation of soil and water. Study it and answer the questions that follow.



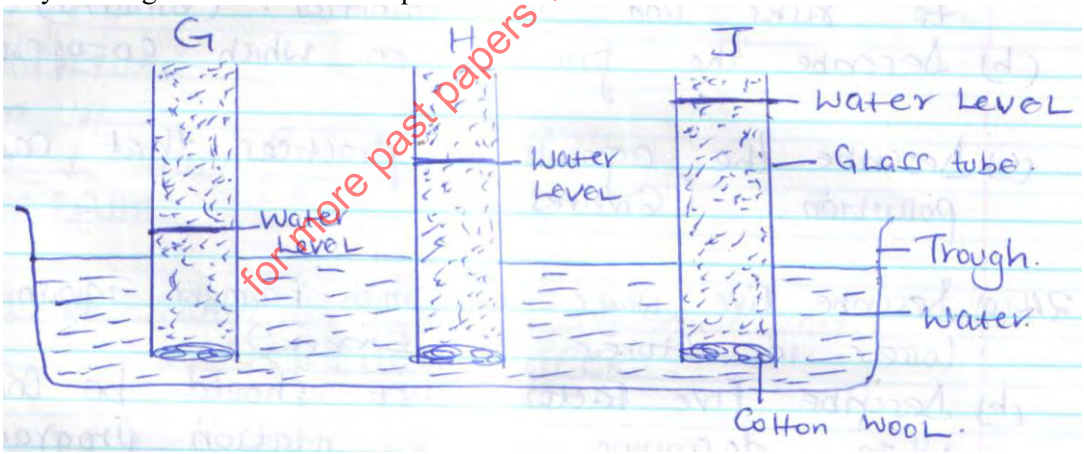
a) Identify the method illustrated above. 1mk
b) Describe the above physical measure conserves soil and water. 2mks
c) Name two other physical measures that can be used to conserve water. 1mk

20. The diagram below illustrates common crop pests in the farm.



a) Identify the pests C and D. 2mks
b) State two ways in which pest C damages crop produce. 1mk
c) What is the effect of pest D in the growth of Irish potatoes? 1mk
d) State two ways of controlling pest C. 2mks

21. The diagram below shows an experiment set up using soil types G, H and J and observations made after 24 hrs. Study the diagram and answer the questions that follow.



a) What is the experiment represented above designed to study? 1mk
b) Name the three soil types G, H and J. 3mks
c) State two ways how a farmer would improve the soil structure of soil type G. 1mk

SECTION C (40 MARKS)
ANSWER ANY TWO QUESTIONS FROM THIS SECTION ON THE PAPERS PROVIDED

22. a) Describe production of beans under the following subheadings.
i) Varieties. 2mks
ii) Land preparation 3mks
iii) Field management practices. 5mks
b) Give reasons why pruning is done in crop production. 5mks
c) Explain five causes of land fragmentation in Kenya since independence. 5mks

23. a) Explain various ways by which a farmer can adjust to risks and uncertainties. 6mks
    b) Describe the principles on which co-operatives work. 8mks
    c) Describe the agricultural practices that cause water pollution. 6mks
24. a) Describe five ways by which farmers minimize grain losses in stores. 5mks
    b) Describe five factors that should be considered when designing a crop rotation programme. 5mks
    c) Explain five factors that influence spacing in crops. 5mks
    d) Explain five ways in which high level of education and technology influence agriculture.

443/2
AGRICULTURE
PAPER 2

SECTION A (30 MARKS)
ANSWER ALL QUESTIONS IN THE SPACES PROVIDED

1. State four reasons for culling breeding sows. 2mks
2. Differentiate between mothering ability and prolificacy in livestock breeding. 2mks
3. State four causes of egg eating in poultry production. 2mks
4. State three factors that determine the amount of water intake by a farm animal. 1 ½ mks
5. Name two types of roughages. 1mk
6. State four factors to consider when siting a fish pond. 2mks
7. State four practices that should be carried out on wooden fencing posts to make them last long. 2mks
8. Give two signs that would indicate that a cow has died of anthrax. 1mk
9. State four factors that stimulate milk let down in a lactating cow. 2mks
10. State four advantages of artificial calf rearing in dairy cattle management. 2mks
11. Give four sources of farm power which are environmental friendly. 2mks
12. Name three types of calf pens. 1 ½ mks
13. Give four features of housing that help to control livestock diseases. 2mks
14. Give four measures that should be taken to control tapeworms on the farm. 2mks
15. State four signs of broodiness in a hen. 2mks
16. State two problems associated with tractor hire service that farmers encounter. 1mk
17. Give four reasons for controlling livestock diseases. 2mks

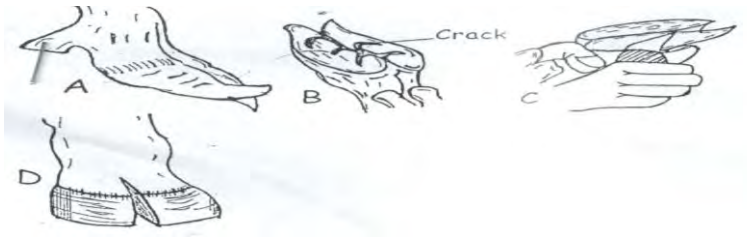
SECTION B (20 MARKS)
ANSWER ALL THE QUESTIONS IN THIS SECTION IN THE SPACES PROVIDED

18. Study the table below and fill in the word. 3mks

Description	Cattle	Pigs	Poultry
Young from birth/hatching to wearing	----------a----------	----------b----------	chick
Young female before first parturition	----------c----------	Gilt	----------d----------
Mature male for breeding	Bull	----------e----------	----------f----------

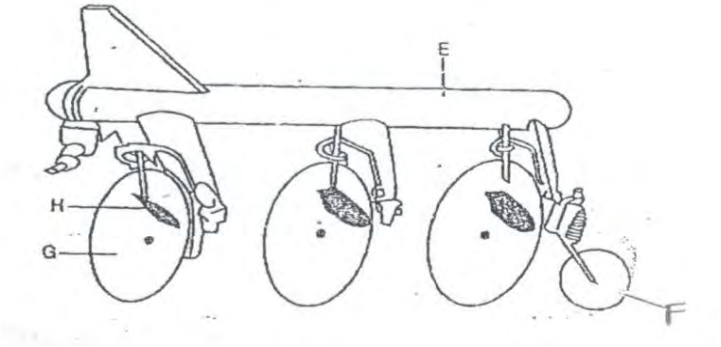
b) Give four reasons for rearing indigenous cattle in marginal areas of Kenya. 2mks

19. The diagrams below show different conditions of hooves of animals; Study them and answer the questions that follow.



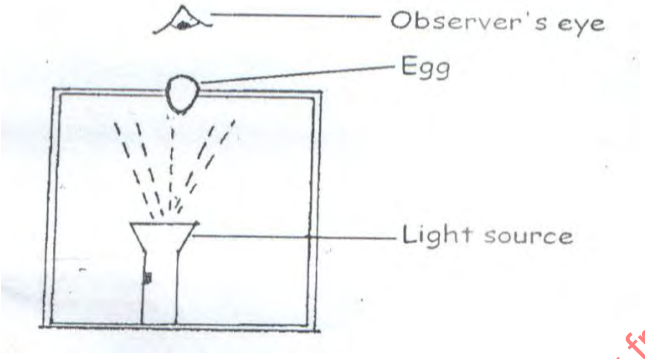
i) Identify the conditions labeled A, B, C and D. 2mks
ii) Name two tools that can be used to carry out the practice in C above. 2mks
iii) Give one reason why the practice in C above is carried out. 1mk

20. Study the illustration below and answer the questions that follow.



i) Identify the implement illustrated above. 1mk
ii) Name the parts labeled E,F,G, and H. 2mks
iii) State two ways in which the depth of ploughing can be increased when using the implement above. 2mks

21. The diagram below shows a certain practice carried out in the farm.



a) Identify the practice. 1mk
b) Why is the practice above important in poultry farming? 3mks
c) What changes would be observed on the egg above if the practice was done on the 18th day of incubation? 1mk

SECTION C (40 MARKS)
ANSWER ANY TWO QUESTIONS FROM THIS SECTION ON THE PAPERS PROVIDED

22. a) Give four ways in which infectious diseases can spread from one livestock to another within a farm. 4mks
b) Describe the control measures for cannibalism in layers. 8mks
c) State the disadvantages of using live fences in the farm. 8mks

23. a) Explain eight ways in which ticks can be controlled on a livestock farm. 8mks
b) Describe six management practices that would ensure clean milk production in a dairy herd. 6mks
c) Describe the activities that take place during digestion process in the rumen. 6mks

24. a) Outline five reasons for steaming up in dairy cattle management. 5mks
b) Discuss pneumonia under:-
i) Predisposing factors 3mks
ii) Symptoms 4mks
iii) Control 3mks
c) State the differences between a diesel and a petrol engine. 5mks

M.C. CLUSTER OF SCHOOLS FORM 4 EVALUATION TEST – 2018
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AGRICULTURE
PAPER 1

SECTION A (30 MARKS)
Answer ALL the questions in the spaces provided.

1. Differentiate between apiculture and aquaculture (1 mark)
2. Give two examples of variable and fixed inputs
   - Variable inputs (1 mark)
   - Fixed inputs (1 mark)
3. Name two positive effects of wind on farming (1 mark)
4. Give **four** activities involved in land clearing during land preparation (2 marks)
5. Differentiate between opening valuation and closing valuation in farm accounts (1 mark)
6. State **two** excellent adaptations of weed to their environment (1 marks)
7. State **three** characteristics of tree for agroforestry. (1½ marks)
8. State any **two** factors which determine the amount of fertilizer to be applied in the farm (1 mark)
9. What is seed dormancy? (1 mark)
10. State **three** disadvantage of over head irrigation. (1½ marks)
11. A farmer was advised to apply 200kg of CAN per hectare while top dressing the maize crop, CAN contains 21% Nitrogen calculate the amount of Nitrogen applied per ha (show your working). (2 marks)
12. Give **two** features of perennial weeds that make them difficult to control. (1 mark)
13. Give **three** importance of time by planting. (1½ marks)
14. Give three reasons as to why earthing up is done in crop production. (1½marks)
15. State four advantages of establishing seeds in a nursery instead of planting directly into the field (2 marks)
16. Explain the term ‗roguing' as used in crop production (1 mark)
17. State four advantages of practicing mixes farming in Kenya (2 marks)
18. Give two ways in which good communication has contributed positively towards Agricultural growth. (1 mark)
19. Give two importance of ridging as a tertiary operation in crop production. (1marks)
20. a. What is irrigation? (½marks)
    b. State **three** conditions under which irrigation is recommended to be used. (1 ½ mark)
21. State **four** ways in which soil fertility can be maintained. (2 marks)

SECTION B: (20MARKS)
Answer all the questions in the spaces provided.

22. The following table illustrates the relationship between the input (NPK) fertilizer and total maize production (90kg) bag.

NPK fertilizer In put (kg)	Total maize production In 90 kg bags	Marginal products in 90kg bags
0	5	—
30	12	—
60	28	—
90	47	—
120	59	—
150	65	—
180	68	—
210	70	—
240	70	—
270	68	—

    a. Calculate the marginal production (5 marks)
    b. On a graph paper, plot put of the maize against the NPK fertilizer (4 marks)