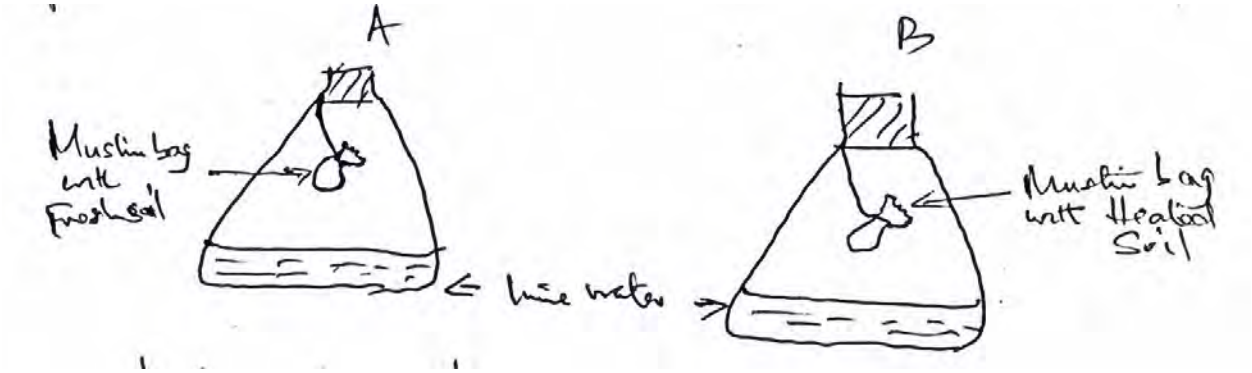
CASPA AMUKURA PARISH EXAMINATION 2021
233/1
AGRICULTURE FORM IV
(THEORY)
SECTION A (30 MARKS)

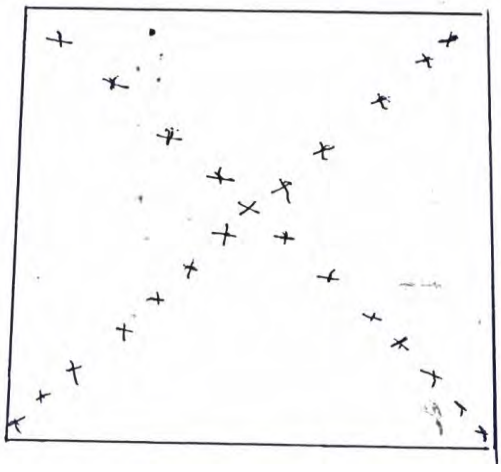
Answer all questions in this section in the spaces provided

1. a) Give **TWO** characteristics of intensive farming system … (1mk)
   b) State **TWO** advantages of mixed cropping (1mk)
2. State **TWO** roles of humus in the soil (1mk)
3. List **FOUR** effects of temperature on crop growth (2mks)
4. Diagram below shows an experiment carried out by Form 1 students. Study and answer the questions that follows.



   a) What is the objective of the experiment ($^1/_2$mks)
   b) What observation should be made after 12 hours in flask **A** and **B** (1mk)
   c) Give the reason for your observation (1mk)
5. Give **THREE** factors that determines the depth of ploughing in land preparation ($1^1/_2$mks)

6 a) what is minimum tillage (1mk)
   b) Give **FOUR** practices that encourages minimum tillage (2mks)
7 a) State **TWO** types of irrigation carried out in Kenya (1mk)
   b) List **FOUR** uses of water on the farm (2mks)
8. Give **THREE** reasons for keeping health record in the farm ($1^1/_2$mks)
9. The diagram below shows a method of soil sampling



   a) Name the method illustrated above ($^1/_2$mk)
   b) State **THREE** precautions taken when collecting a soil sample ($1^1/_2$mks)
   c) Give **FOUR** reasons for testing soil (2mks)

10. State **TWO** reasons for seed treatment (1mk)
11. Give **TWO** factors that determine spacing of beans (1mk)

12. State **FOUR** benefits of farmer having land tittle deed (2mk)
13. List **THREE** materials that can be used to construct a gabion (1 $^1/_2$mks)
14. List **FOUR** harmful effects of crop pests (2mks)
15. Give **FOUR** ways by which a farmer can improve labour productivity on the farm (2mks)

SECTION B (2O MARKS)

16. Differentiate between cropping and harvesting in fish farming (2mks)
17. Give **THREE** factors that determine the quality of shading forage (3mks)
18. State **four** characteristics of extensive farming systems (2mks)
19. State **TWO** factors that determine selectivity of herbicides (2mks)
20. Give **TWO** factors affecting the quality of hay (2mks)
21. State **four** physical factors in soil formation (2mks)
22. State **four** factors that determine the depth of planting. (3mks)
23. State **four** harmful affects ticks on livestock. (2mks)

SECTION C (40MARKS)

Answer Any TWO questions in this section

24 (a) Explain **FIVE** cultural methods of pest control (10mks)
(b) Outline **FIVE** factors considered in timely planting of annual crops (10mks)
25 (a) Outline the process of land Adjudication (5mks)
a. Discuss **five** reasons for carrying out minimum tillage. (5 marks)
b. Explain **5** ways in which soil losses fertility. (10 marks)
26 a) Describe **seven** field management practices in tomato production. (7marks)
b. Outline **five** factors that determine water requirements in an animal's body. (5 marks)
c. Describe the transplanting of tree seedlings. (8 marks)

CASPA AMUKURA PARISH EXAMINATION

443/2

AGRICULTURE Paper 2

SECTION A (30 Marks)

Answer ALL questions in the spaces provided

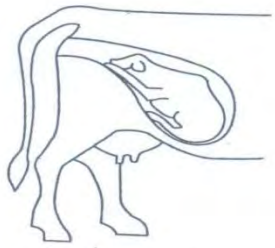
1 Name the pig breed which has the following characteristics: long, large, and white body, broad and dished face, upright ears. (½ mk)
2 Name two non-infectious causes of livestock diseases. 1mk
3. Name **four** materials that are collected by bees. (2mks)
4. Give two reasons for the two month dry period the cow requires before parturition (1mks)
5. Outline four ways of controlling egg eating in poultry. (2mks)
6. (a) Name the cause of milk fever. (½ mk)
(b) Give one control measure of milk fever. (½ mk)
7. State **three** field conditions under which a disc plough should be used instead of a mouldboard plough. ($1\frac{1}{2} mks$)
8. (a) State two disadvantages of using metal frames in construction of farm building. (1mk)
(b) Give three reasons for seasoning timber. (1 ½ mks)
9. List four factors that influence the pulse rate of an animal (2 mks)
10. State four qualities of colostrum which make it suitable for feeding newly born calf. (2mks)
11 . Name two dual purpose breeds of cattle (1mk)
12. Outline four reasons for swarming of bees. (2mks)
13. State four reasons for steaming up in animal production. (2 mks
14. Give two causes of high mortality in piglets. (1mk)
15. (a) what is a notifiable disease? (1mk)
(b) Name four examples of notifiable diseases in livestock. (2mks)
16. Give **three** reasons why drenching alone is not an effective method of controlling intestinal parasites in livestock. ($1\frac{1}{2} mk$)
17. State four qualities of eggs preferred by consumers in the market (2 mks)

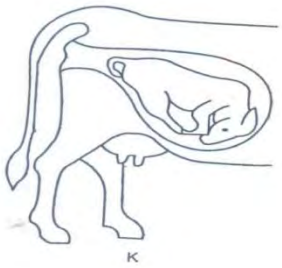
18. Give four light breeds of chicken in poultry rearing. (2mks)

SECTION B (20 Marks)

Answer all questions in this section in the spaces provided after every question

19. The illustration below show different presentation of foetus at the time of birth. Study the illustrations and answer questions that follow.





(a) What diagram represents the normal position of a calf at birth (1mk)
(b) What term is used to refer to position shown in diagram **K**? (1mk)
(c) State three signs of parturition in cattle. (3mks)

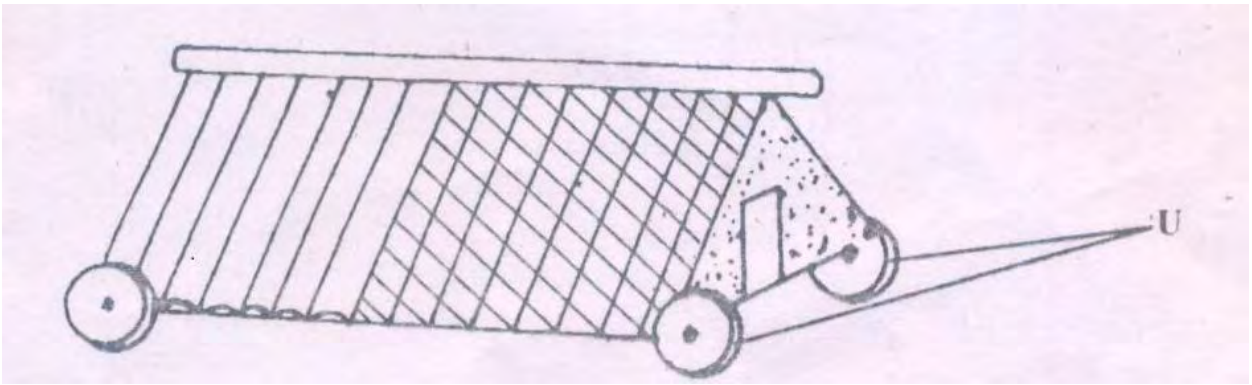
20. Observe the tools A, B and C illustrated below then answer the questions that follow.

a) Name tools A, B and C and state the correct use of each tool. (3mks)

Tool	Identity	Function
A		
B		
C		

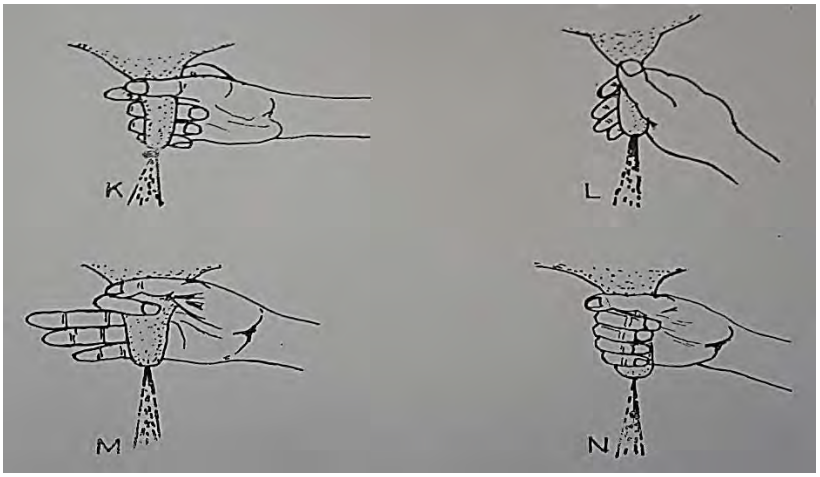
b) State **two** maintenance practices that should be carried out to ensure that tool C is in a good working condition. (2mks)

21. The diagram below represents a poultry keeping structure.



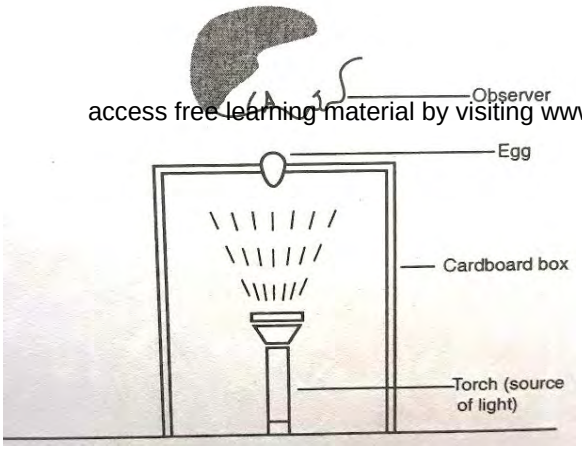
(i) Identify the structure. (½ mk)
ii) Identify the part labeled **U.** (½ mk)
iii) State the maintenance carried out on the structure illustrated above. (1mk)

22. The diagrams K, L, M and N below show four possible ways of drawing milk from the teat of a cow during milking.



a) Which diagram shows the proper way of drawing milk. (1mk)
b) How long should it take to milk a cow from the start to the end of milking. (1mk)
c) How would a milkman ensure that no milk remains in the udder at the end of milking? (1mk)
d) Give **two** practices carried out on milk immediately after milking. (2mks)

23. Below is an illustration of an activity carried out by a poultry farmer keeping layers



a) Identify the activity carried out using the set-up. (1mk)
b) State **two** abnormalities in eggs that can be detected using the set-up above. (1mk)
c) How can a farmer improve the following?
   i) Hardness of egg shells. (½ mk)
   ii) Yellowness of the egg yolk. (½ mk)

SECTION C (40 Marks)

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

24.. Describe fish management under the following sub headings
a) Procedure for establishing a pond. 10mks
c) Stocking the pond. 3mks
d) Management practices that would ensure maximum harvest of fish from the pond. 5mks
e) Methods of preserving fish. 2mks

25. a) State the functions of any **six** parts of a plunge dip. (6mks)
b) State and explain **four** factors considered when selecting a breeding stock. (4mks)
c) Explain **five** mechanical methods of controlling ticks. (10mks)

26 a) State **five** advantages of embryo transplant. (5mks)

b) Describe coccidiosis disease under the following sub- headings.

i) Animals attacked (2mks)

ii) Causal organism (1mk)

iii) Symptoms (4mks)

iv) Control measures (3mks)

d) A ration containing 20% DCP for growing chicks is to be obtained by mixing ground maiz containing 10% DCP and fishmeal containing 50% DCP. Calculate the amount of each feedstuff in kilograms required to prepare 200kg of the feed (5mks)

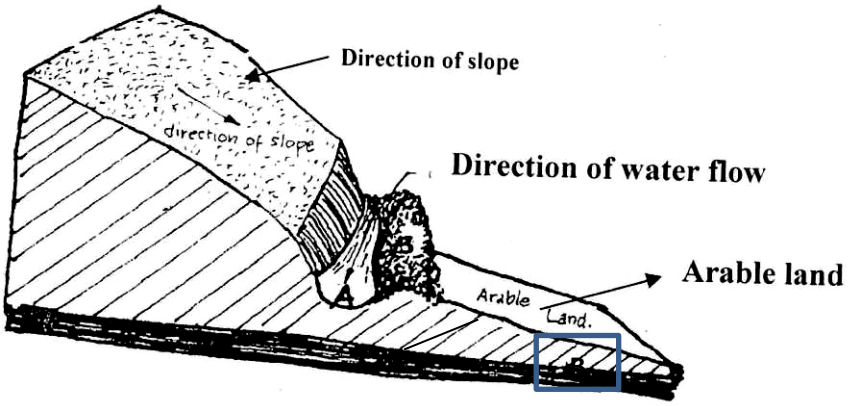
MURANG'A SOUTH
443/1
AGRICULTURE PAPER 1

SECTION A (30MKS)
Answer all the questions in the spaces provided

1. Name the routine field practice done by;
   a. Remove of extra suckers in banana stool. (½ mk)
   b. Removal of old stems down to level of top foliage in pyrethrum (½ mk)
   c. Removal of suckers from coffee bushes (½ mk)
2. State three characteristic of phosphate fertilizers. (1½ mks)
3. State two physical properties of soil that influence crop production (1 mk)
4. Outline four ways by which crop pests are classified (2 mks)
5. State three use of labour records in Agricultural (1½ mk)
6. Give four advantages of overhead irrigation in crop production (2 mks)
7. List three basic concepts in agricultural economics. (1½ mk)
8. Give four varieties of tomatoes grown for processing (2 mks)
9. State four pasture management practices done to enhance per unit area. (2 mks)
10. Name two macro-nutrients which are classified as;
    a. Fertilized elements (1mk)
    b. Liming elements (1mk)
11. Give three ways by which pruning helps to control disease in crops. (1½ mk)
12. State four ways in which weeds are exceedingly adapted to the environment (2 mks)
13. State four factors that determine the time at which a crop is planted. (2 mks)
14. Give four factors that affect the effectiveness of a pesticide. (2 mks)
15. State four reasons for staking tomatoes in crop production. (2 mks)
16. State three cultural methods of soil and water conservation (1½ mk)
17. State four benefits of having a land tittle deed to a farmer (2mks)

SECTION B (20MKS)
Answer all questions in the spaces provided

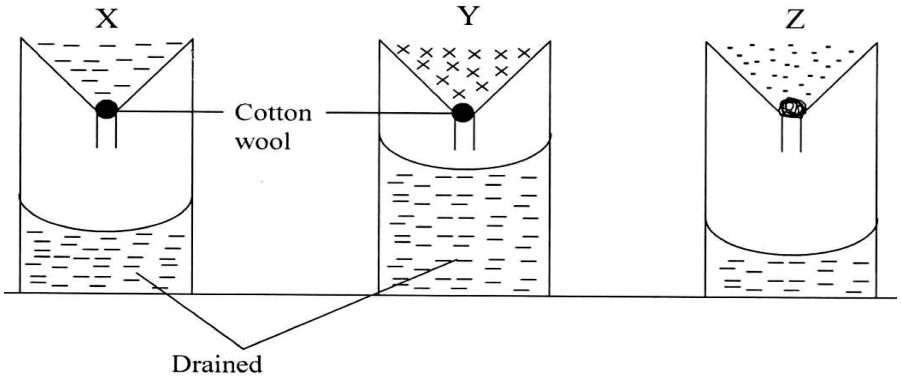
18 The illustration below shows a newly constructed cut-off drain. Study it and answer the questions that follow.



(a) (i) How can part of the structure labeled B be stabilized after it has been constructed? (1mk)
(ii) Identify the part of the cut-off drain labeled A. (1mk)

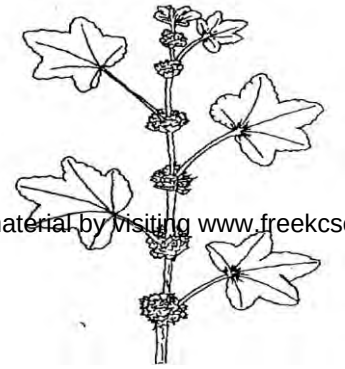
(b) Describe the procedure of constructing a cut-off drain. (2mks)

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



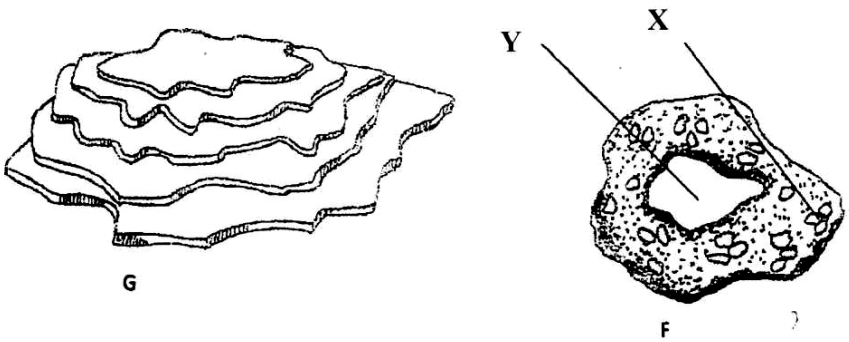
i) Identify the soils in each of the following funnels labeled X, Y and Z. (1½mks)
ii) Which of the types of soil can be said to have the highest porosity rate? (½mk)
iii) Give reasons for your answers in (ii) above. (2mks)
iv) Which type of soil would be suitable for planting paddy rice? (1mk)
v) Explain your answer in (iv) above. (1mk)

20 Below is a diagram of a Common East African Weed.



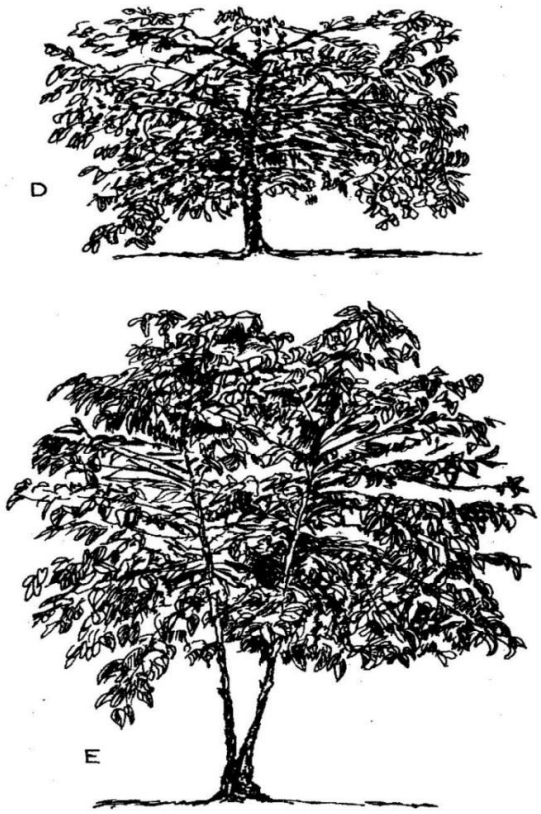
i) Identify the weed illustrated above. (1mk)
ii) Give **one** harmful effect of the weed illustrated above to livestock. (1mk)
iii) State **two** methods of controlling the weed illustrated above. (1mk)

21 The diagrams below illustrate some soil structures. Study them and answer the questions that follow.



(a) Identify the soil structures **F** and **G**. (1mk)
(b) Name the part labeled **X** and **Y** in diagram **F**. (1mk)
(c) Describe **two** ways through which structure **G** influence crop production. (2mks)

22 The diagrams labeled D and E below are illustrations of coffee established using two different formative pruning systems. Study them and answer the questions that follow.



(a) Name the system of pruning illustrated in diagram D above. (1mk)

(b) Describe how the pruning system illustrated in diagram E is carried out. (2mks)

SECTION C (20MKS)

Answer any two questions in section C

23. a. Explain factors affecting rooting of cutting (5mks)
    b. State and explain the factors that determine the spacing of crops when planting (10mks)
    c, Give five ways in which government policy influence agriculture (5mks)
24. a, State and explain the cultural methods used in control of crop pests (8mks)
    b. Describe the procedure of silage making (7mks)
    c. State the observable indicators of economic development of a nation (5mks)
25. a. Outline five advantages of adding organic manure into the soil (5mks)
    b. Describe the precautions taken when harvesting tea (3mks)
    c. Study the following information which was extracted from Mr. Mulong'os farm record on 31.2.12.2020 and answer the questions that follow.

Loan payable to bank	– shs.	300,000
Five milking cows	- shs.	250,000
400 layers	- shs.	80,000
20 goats	-shs.	30,000
Debt payable to coo-p society	- shs.	20,000
Building and structures	- shs.	600,000
Bonus payable to workers	- shs	19,000
Cattle feeds	- shs.	10,000
Animal drugs in store	- shs.	4,000
Debt receivable	- shs.	18,000
Breakages to repair	- shs.	30,000
Cash to at hand	- shs.	20,000
Cash in bank	- shs	30,000
Spray equipment	- shs.	12,000

i. Prepare a balance sheet for Mr. Mulang'os farm using the information above (6mks)
ii. Was Mr. Mulango farm business solvent or insolvent? (1mk)

d. Describe post-harvest practices carried out on maize (5mks)

MURANG'A SOUTH
443/2
AGRICULTURE PAPER 2
END OF TERM 2 EXAMINATIONS

SECTION A: (30 MARKS)

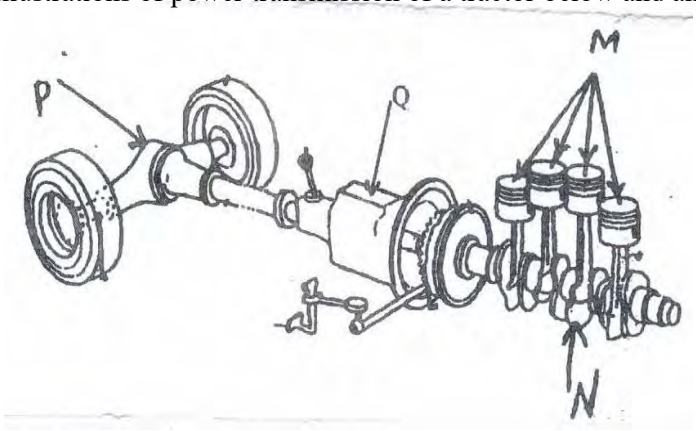
Answer ALL questions in this section in the spaces provided.

1. State **three** ways used to improve production of indigenous cattle. (1½ marks)
2. List **four** factors considered when formulating a livestock ration. (2 marks)
3. List **two** methods of identifying pigs. (1 mark)
4. State **two** reasons why walls of a dairy shed should be white washed instead of painting. (1 mark)
5. Give **two** reasons for applying oil and grease on a rotary mower. (1 mark)
6. Differentiate between cropping and harvesting in fish farming. (1 mark)
7. (a) Name **two** common diseases that attack bees in a colony. (1 mark)
   (b) Name the equipment used to make the bees less aggressive during harvesting of honey. (½ mark)
8. Name **two** livestock diseases controlled through Artificial insemination. (1mark)
9. (a) List **two** types of feed additives. (1 mark)
   (b) Give **two** reasons why it is important to include additives in commercial feeds. (1mk)
10. Name **four** symptoms of Gumboro disease in poultry production. (2 marks)
11. Name **four** light breeds of poultry. (2 marks)
12. Give **three** methods of harnessing tractor power. (1½ mark)

13. State **four** condition that encourage egg eating in poultry production (2mk)
14. Give **four** reasons why breeding boar may be culled. (2 marks)
15. Give **four** factors considered when siting a milking parlour. (2 marks)
16. State **four** maintenance practices carried out on a wire fence. (2 marks)
17. List **four** functions of the rumen in the digestion of feed in ruminants. (2marks)
18. State the use of each of the following parts in a cattle dip. (2 marks)
    (i) Roof
    (ii) Silt trap
19. State **three** major routes of administering vaccine in a day-old chick (1½ mark)

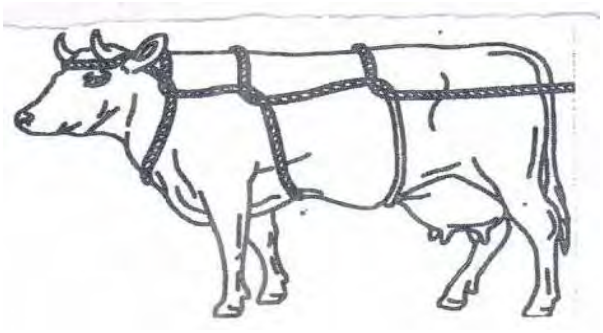
SECTION B (20MKS)

20. a. A cow was given 120kg of a roughage feed. Out of that 40kg was lost as faeces, 10kg as urine and 5kg as gases. Calculate the digestibility of the feed. (3mks)
    b. State two reasons for feeding livestock (2mks)
21 Study the illustrations of power transmission of a tractor below and answer the question that follow



a. Identify and name the parts labeled M, N, P. (3mks)
b. State two functions of part Q (2mks)

22. a. Identify the practice illustrated below. (1mk)



b. Give four occasions when it may be necessary to carry out the above practice. In livestock. (2mks)
c. Give two animal conditions under which the method cannot be used (2mks)

23. The figure below shows a cow suffering from lack of certain minerals

i. Name the condition the cow is suffering from (1mk)
ii. Identify the mineral deficient (1mk)
iii, State three characteristics of the condition named in (i) above (3mks)

SECTION C (40MKS)
Answer any two questions in section C

24. a. Describe factors to consider when selecting livestock for breeding. (10mks)
b. What are the signs for parturition in a sow? (4mks)
c. State six sign of broodiness in birds (6mks)

25. a. Describe the process of digestion in the following sections in the alimentary canal of a non-ruminant animal.
i. Mouth (1mk)
ii. Stomach (3mks)
iii. Small intestines (6mks)
b. State and explain factors that predispose livestock to diseases (10mks)

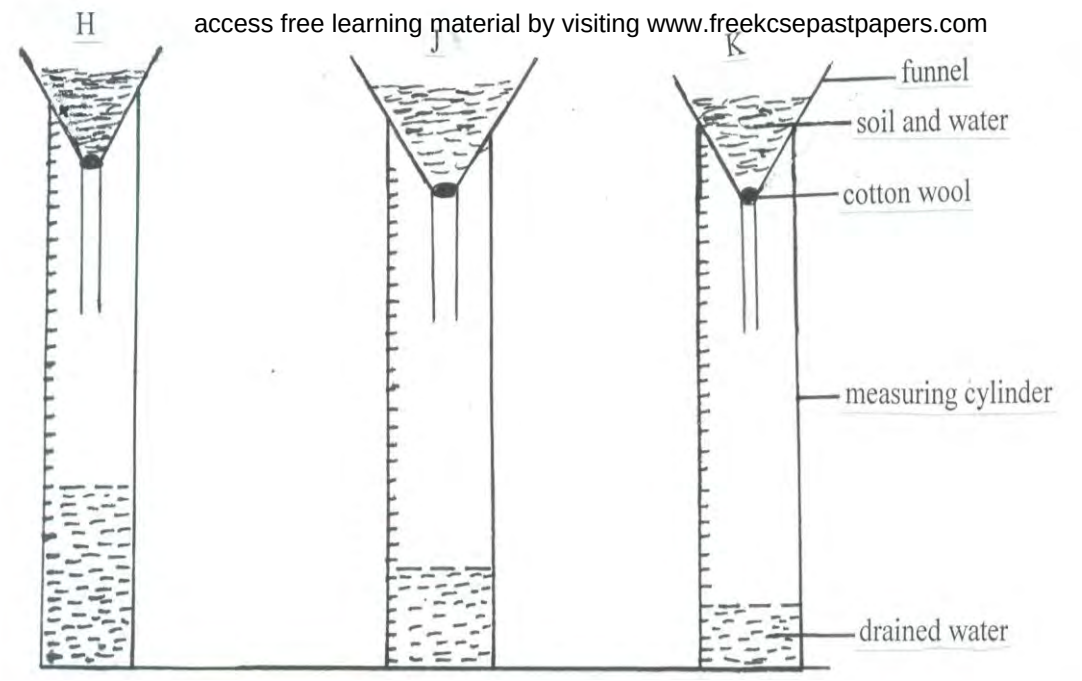
26. a. Describe the use of various hand tools required for the construction of a Wooden fence. (5mks)
b. Outline the procedure of castrating a bull using a burndizo (7mks)
c, Describe the management practices that ensure clean milk production in a dairy farm. (8mks)

SAMIA SUB-COUNTY JOINT EXAMINATION MOCK 2021
443/1
AGRICULTURE PAPER 1

1. Name two situations under which irrigation is practiced (1mk)
2. Give a reason why ranching is an improvised pastoral nomadism (1mk)
3. State two ways by which a soil of PH 3 can be raised to a PH of 6 (1mk)
4. Outline two effects of adding organic matter to sandy soil (1mk)
5. State four functions of young farmers club in schools (2mks)
6. Distinguish between a perfect and imperfect market. (1mk)
7. Name four financial documents used in the farm (2mks)
8.. State four factors that determine the depth of planting (2marks)
9. State four minimum tillage practices (2marks)
10. Give four ways of improving labour productivity on a farm (2mks).
11 State four forms of agroforestry . (2mks)
12. A farmer plants maize on his piece of land measuring 40m by 30m at a seed rate of I seed per hole. If he used a spacing of 75cm by 25cm, Calculate this plant population. (2marks).
13. State four reasons for conserving forage (2marks)
14. Give four benefits of a land title deed (2mks)
15. State four steps of gully formation (2mks)
16. State two characteristics of a good root stock for grafting (1mk)
17. State two main causes of silage loses (1mk)
18. State four aims of land settlement programmes in Kenya (2mks)
19. Give two factors that influence the stage at which crop is harvested (1mks)

SECTION B(20MARKS)

20. The illustrations below represent an experiment to compare the porosity and water holding capacity of three types of soils. Carefully study the experiment and then answer the questions that follow



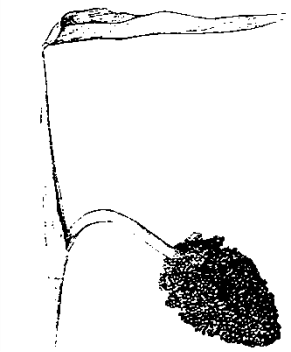
(a) Identify the soil in each of the funnels labeled (3marks)
(b) Which of the three types of soil can be said to have the highest porosity rate? (½ mk)
(c) Which type of soil would be suitable for planting paddy rice? (½mk)

21.The diagrams below represent some panicles of varieties of Sorghum crop growing in the field. Study them carefully and answer the questions that follow.

Variety A

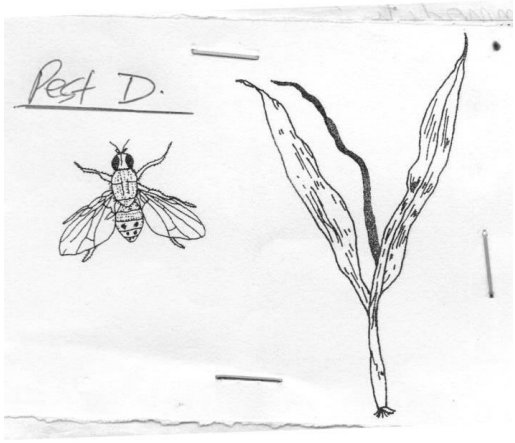
Variety B

Variety C



a) Identify the types of panicles in each of the varieties represented by A,B and C
   Variety A……. (1mark)
   Variety B…….. (1mark)
   Variety C…… (1mark)
b) Which of the varieties named in (a) above is less easily damaged by bird pests (1mrk)

c) The diagram below represents a pest labeled D that infests Sorghum plants during early stages of establishment



i) Identify the pest . (1mark)

ii) State two methods of controlling the pest named in C(i) above (2marks)

22. Study diagram below and answer questions that follow.

(i) Name the farming practice illustrated above. (1mark)

(ii) Give the procedure followed to carry out the practice you have named in (i) above (3marks)

(iii) state the importance of carrying out the farming practice named above. (1 mark)

23. The diagram below shows common weeds, study them and answer the questions that follow.

a) Identify the weeds J and K. (2marks)
b) State the effects of weed labeled Jto livestock. (1 mark)
c) Give **one** reason why it is difficult to control the weed labeled L? (1 mark)

SECTION C (40 MARKS)

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

24. Describe the production of onions under the following sub headings
    a. Ecological requirements (4 marks)
    b. Planting (5 marks)
    c. Field practices (4 marks)
    d Harvesting and marketing (7 marks)

25 a. Outline eight uses of farm records (8 marks)
    b. Explain the various ways by which a farmer can adjust to risks and uncertainties (6 marks)
    c. State precautions taken when harvesting pyrethrum (6mks)

26 a. Explain five causes of land fragmentation in Kenya since independence (5 marks)
    b. Describe the advantages of land consolidation and registration. (8 marks)
    c. Explain the objectives of land reform under taken in Kenya. (7 marks)

SAMIA SUB - COUNTY EXAMINATION - FORM FOUR 2021
AGRICULTURE PAPER 2

443/2

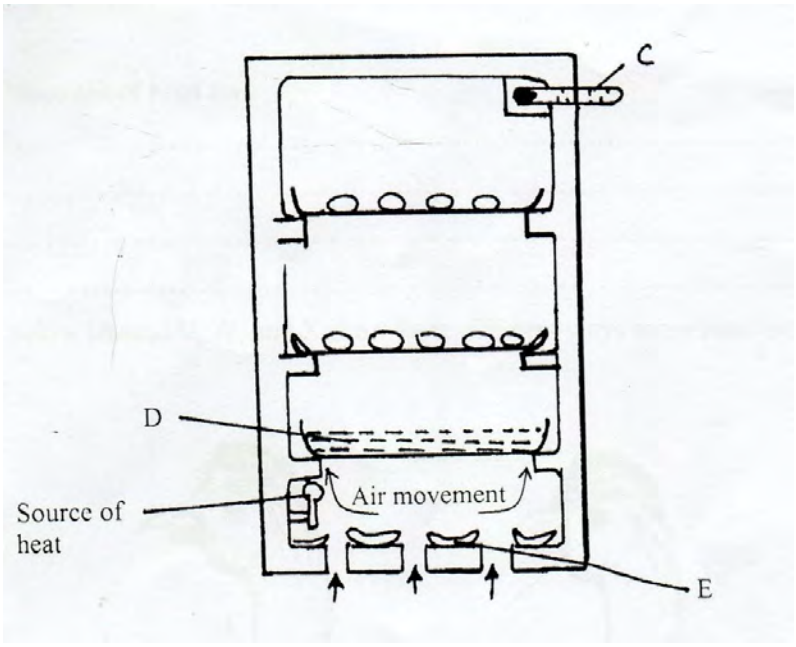
Section A (30marks)

1. Give **two**reasons for docking in sheep production. (1mk)
2. Give **four** ideal qualities of a good calf pen (2mks)
3. Outline **four** characteristics of Romney marsh sheep breed (2mks)
4. (a) State **two** disadvantages of using metal frames in construction of farm buildings (1mk)
   (b) Give **two** reasons for seasoning timber (1mk)
5. Outline **four** reasons for swarming of bees (2mks)
6. List **two** methods that can be used to preserve fish (1mk)
7. (a) What is a notiafiable disease? (1mk)
   (b) Name **four** examples of notifiable diseases in livestock (2mks)
8. Name**two**major physical differences between Bactrian and Dromedary breeds of camel. (1mk)
9. State **two** characteristics of heavy poultry breeds (1mk)
10. List **two** maintenance practices of a wood chisel (1mk)
11. State **four** ways of controlling tsetse flies (2mks)
12. State **four** characteristics of livestock roughage feedstuff (2mks)
13. List **two** equipment used in handling cattle during agricultural exhibition (1mk)
14. State the gestation period of the livestock animals given below
    (a) rabbit (½mk)
    (b) goat (½mk)
15. State **four** disadvantages of natural mating (2mks)
16. State **one** egg content added to it at the magnum during egg formation process (1mk)
17. State **four** methods used to control cannibalism in a deep litter system (2mks)
18. (a) Give **three** uses of Biogas in the farm (1 ½ mks)
    (b) State **three** reasons why the use of wind power on the farm is limited (1 ½mks)

SECTION B: (20MARKS)

ANSWER ALL QUESTIONS IN THIS SECTION.

19. (a) The illustration below represents equipment used in poultry production. Study it carefully and answer the questions that follow:



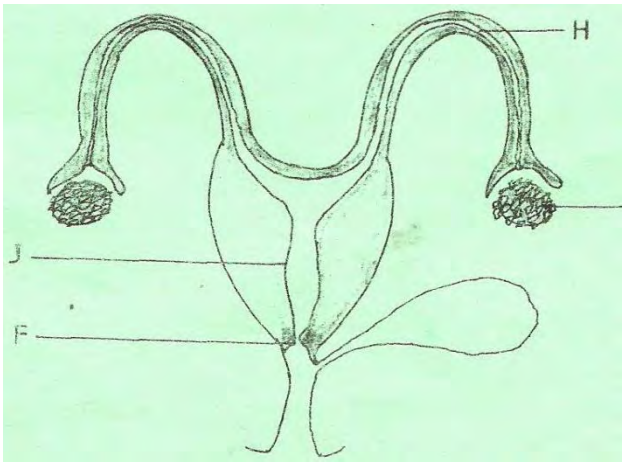
i) Identify the equipment illustrated above. (1mk)

ii) Name the parts labeled C,D and E on the diagram of the equipment illustrated on the equipment in a) above (1 ½mks)

iii) What are the functions of the parts labeled C,D and E (3mks)

(iv) Why is it important to turn the eggs around 180 oc every 6- 8 hours? (1mk)

(b). The diagram bellows shows the reproductive system of a cow. Study it and answer the questions that follow

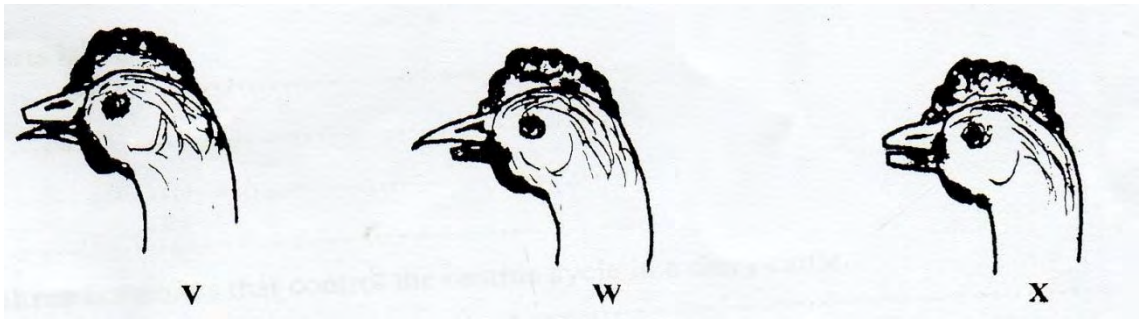


i) Name the parts labeled J , F and H. (1.5mks)

ii) State one function of each of the parts labeled J and H (2mk)

iii) Name three reproductive hormones in dairy cattle (3mks)

20 (a) The illustrations below labeled V,W, and X show three different ways some hens were debeaked.



i) Which hen was correctly debeaked ? (1mk)
ii) state two reasons for your choice in (i) above (1mk)

(b) Name any two tools which would be used for debeaking. (2mks)

21. Boran Dam X FRIESIAN SIRE – f1 heifer x charolais

(a) What type of breeding system is shown above? (1mk)
(b) Why would you recommend such a breeding system? (1mk)
(c) What characteristic in the heifer are you improving by using such a breeding system? (1mk)

SECTION C: (Answer any two questions)

22 (a) outline ten differences between a tractor drawn mould plough and an ox mouldboard (10mks)
(b) describe management of growers to point of lay (10mks)

23. (a) (i) Give three factors considered in siting a farm structure (3mks)
(ii) Describe the functions of each of the following parts of a plunge dip (7mks)
(a) Foot bath
(b) Entrance race
(c) Roof
(d) Drainage race
(e) Jump
(f) Dip tank
(g) Exit step

(b) Describe the procedure of constructing a barbed wire fence (10mks)

24. (a) (i) Give three factors affecting the amount of food given to an animal (3mks)
(ii) State and explain seven essential of clean milk production (7mks)
(b) Describe digestion of grass in the rumen of a cow (10mks)

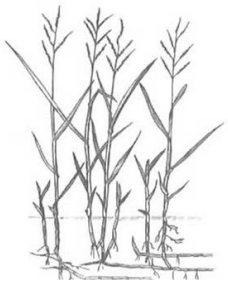
SUKELLEMO
443/1
AGRICULTURE
Paper 1

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

1. State **four** characteristics of shifting cultivation (2 marks)
2. Give **four** reasons why a well drained soil is suitable for crop production (2 marks)
3. State **four** factors which determine the depth of ploughing (2 marks)
4. State **three** advantages of overhead irrigation over surface irrigation ($1^1/_2$ marks)
5. a) State the law of demand (1 mark)
   b) State **four** factors that determine the demand of a commodity in a free Market economy (2 marks)
6. state **four** ways in which plant nutrients may be lost from the soil (2 marks)
7. a) **Differentiate** between macro nutrients and micro nutrients (1 mark)
   b) State **four** functions of calcium in plant growth and development (2 marks)
8. **Explain** the following terms as used in farm account (4 marks)
   i) Cash account
   ii) Ledger
   iii) Balance sheet
   iv) Purchase order
9. State **four** factors that influence spacing when planting a pure stand maize (2 marks)
10. State **four** reasons for pruning fruit crop (2 marks)
11. State **four** ways by which a farmer can make efficient use of pasture crop (2 marks)
12. List **four** characteristics of a good root stock for grafting (2 marks)
13. Give **four** factors to consider when grading tomatoes for fresh market (2 marks)
14. Give **three** ways through which checkdams control soil erosion ($1^1/_2$ marks)
15. State **two** uses of gross margin analysis in farm business (1 mark)

SECTION B
Answer all the questions in the spaces provided

16. The diagrams illustrated below shows arable weeds. Study them carefully and answer the questions that follow

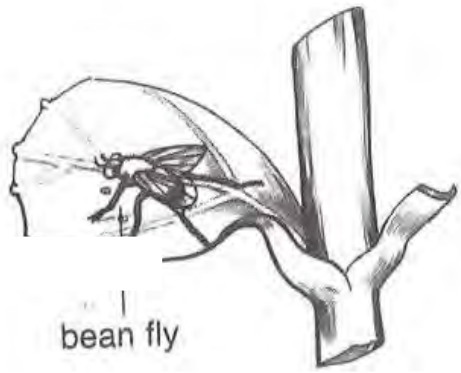


A

B

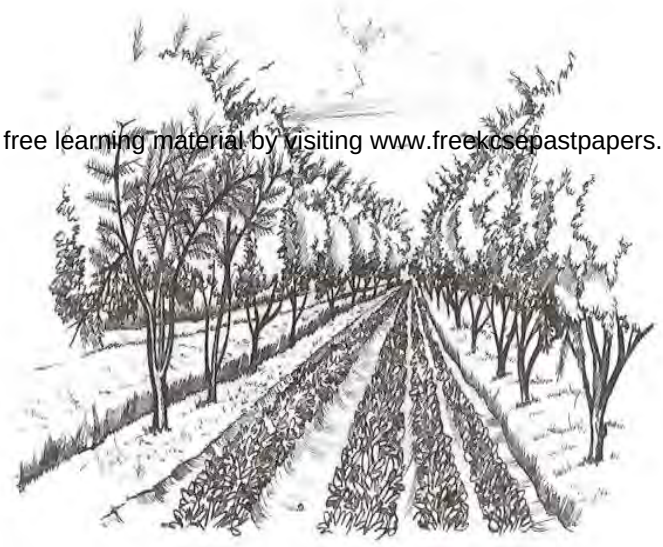
a) Identify the weeds A and B (2 marks)
b) Why is it difficult to control weeds A and B (2 marks)
c) List **three** economic importance of the weeds illustrated above (3 marks)

17. The diagram shows a pest that attacks beans in the field. Study it carefully and answer the questions that follow.



a) Identify the pest illustrated above (1 mark)
b) List **three** cultural methods of controlling the pest illustrated above (3 marks)
c) State **two** other pest that attack beans in the field (2 marks)

18. The diagram below illustrates an agroforetsry practice. Study it carefully and answer the questions that follow.



a) Identify the agroforestry practice illustrated above (1 mark)
b) List **three** benefits of the above agroforestry practice (3 marks)
c) State **three** sites for agroforestry trees (3 marks)

SECTION C

Answer ONLY two questions in this section in the spaces provided after the questions

19. a) Give **four** examples of joint products in livestock production (4 marks)
    b) List **four** variable inputs in poultry production (4 marks)
    c) A farmer can combine dairy meal and homemade feeds as shown below

Dairy meal (Kg)	Homemade feed (Kg)	Marginal rate of substitution
1	48	O
2	39	V
3	32	7
4	27	W
5	23	4
6	21	X
7	20	1
8	19	Y

    i. Given the above information calculate the marginal rate of substitution and give values of V,W,X and V (4 marks)
    ii. Given that of homemade feeds is Ksh 800 per kilogram and that of homemade feeds is Ksh 200 per kilogram. Calculate the least cost combination (4 marks)
    d) Outline **four** activities that may be undertaken in organic farming (4 marks)
20. a) State and explain **five** roles of agriculture in economic development of Kenya (5 marks)
    b) Describe measures which should be taken to minimize water pollution on a farm (10 marks)
    c) State and **explain** the various land tenure systems practiced in Kenya (5 marks)
21. a) Outline **six** management practices that should be carried out on a vegetable nursery after sowing seeds until the seedlings are ready for transplanting (6 marks)
    b) Explain **four** precautions that should be observed when harvesting cotton (4 marks)
    c) Explain **five** ways in which the Kenyan government can improve maize production to ensure food security in the country (10 marks)

SUKELLEMO MOCK 2021
443/2
AGRICULTURE PAPER 2

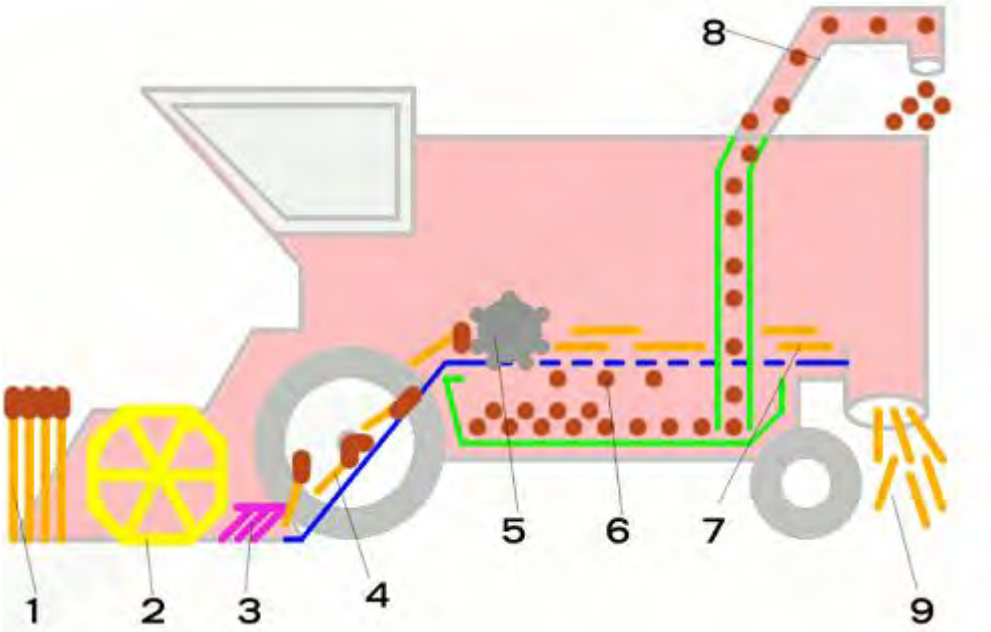
SECTION A (30MKS)

1. State **three** management practices that should be carried out in wheel barrow. (1 ½ mks)
2. Outline **two** cultural importances of livestock. (1 mk)
3. Give **four** reasons why a dairy farmer would prefer to keep jersey cattle breed to Friesian breed? (2mks)
4. Give the distinguishing color for each of the following breeds of livestock. (1mk)
   i) Duroc jersey pig----------
   ii) Saanen----------
5. State any **two** prophylactic measures used in livestock health. (1mks)
6. Give the nutritional disorder that results from deficiency of the following minerals. (1 mk)
   a) copper----------
   b) iodine ----------
7. State **two** precaution measures that should be taken when handling vaccines. (1mk)
8. Which **two** hormones are responsible for milk let down? (1mk)
9. Give **two** disadvantages of water power as a source of farm power. (1 mk)
10. Give **two** advantages of complete milking. (1mk)
11. Using pearsons square method compute 250kg ration with 25% DCP from cotton seed cake which contains 18%DCP and from wheat bran which contains 36% DCP. (3mks)
12. State **two** use of a donkey in the farm. (1mk)

13 *Why* is a calf pen raised 50cm above the ground level? (1mk)
14. State **two** reasons of tailing in sheep. (1mk)
15. Give **two** uses of a gearbox in a tractor. (1mk)
16. Name the rabbit breed that give high quality fur. (1/2 mk)
17. Give **one** reason as to why animals suffering from milk fever should never be given medicine through the mouth. (2mks)

SECTION B (20MKS)

18. Below is diagram of a farm implement. Study it answer questions that follow.

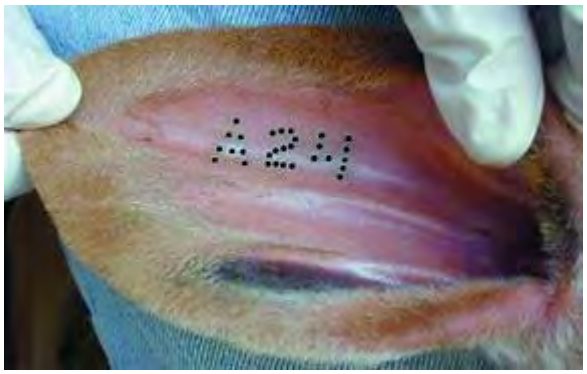


a) Identify the implement. (1mk)
b) Name parts labeled . (2 mks)
c) Give a function of each of the parts you have named above. (2mks)
d) Give the main function of the machinery illustrated above. (1mk)

19. The diagram below represents an external parasite.

a)) Identify the parasite. (1mk)
b) Discuss the parasite under the following subheadings
i) Main animal affected. (1mk)
ii) Harmful effects (2mks)
iii) Control measures (2mks)

20. The diagram below represents a livestock management practice.



a) Name the livestock identification method illustrated above. (2mks)
b) Give an example of an animal where each of the practice is done. (2mks)
c) Name the tool used to carry out practice labeled (1mk)

SECTION C (40MKS)

Select any **two** questions.

21. a) Explain **five** reasons for maintaining tools and equipments. (5mks)
    b) Describe the physical signs of good health in an animal. (4mks)
    c) State **six** functions of water in an animal's diet. (6mks)
    d) Give the procedure of preparing artificial colostrums. (5mks)
22. a) Discuss **six** factors that should be considered when selecting construction materials. (6mks)
    b) Explain the life cycle of two lost gut. (6 mks)
    c) Explain **four** conditions that should be met by all livestock housing structures.(4mks)
    d) Explain **three** differences between ruminants and non ruminants.(3mks)
23. a) State **six** control measures of egg eating in poultry management.(6mks)
    b) Discuss the functions of materials and equipments that are needed in milking. (7mks)
    c) Compare characteristics of indigenous cattle to those of exotic breeds of cattle. (7mks)

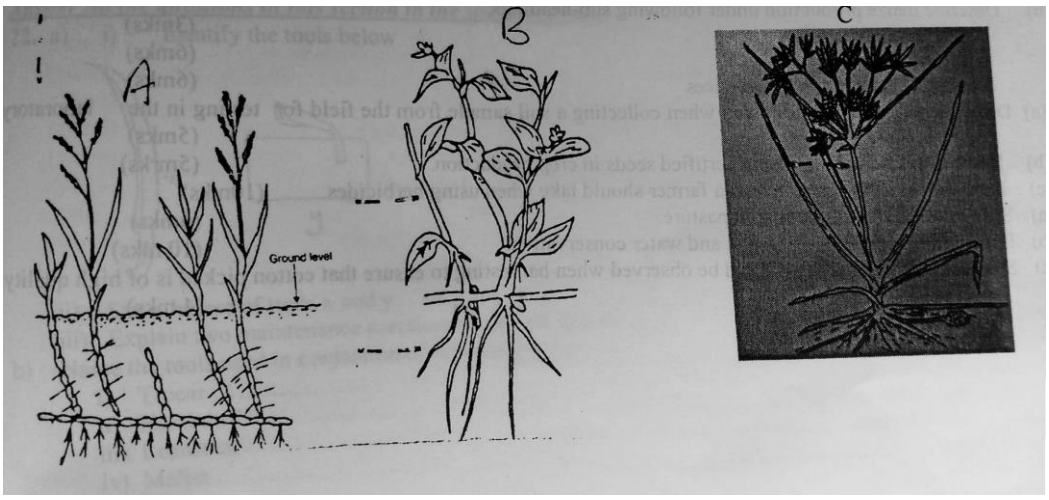
IGAMBANG'OMBE
443/2
AGRICULTURE PAPER I

SECTION A (30MKS)

1. List three factors that determine the stage at which a crop is harvested ($1\frac{1}{2}$mk)
2. State four biotic factors that influence crop production (2mks)
3. State four ways of harvesting water on the farm (2mks)
4. Explain three reasons for early land preparation ($1\frac{1}{2}$mk)
5. Differentiate between thinning and gaping as used in agriculture (1mk)
6. Name three sources of underground water ($1\frac{1}{2}$mk)
7. State three reasons why farmers are encouraged to use certified seeds for planting ($1\frac{1}{2}$mk)
8. List four disadvantages of organic farming (2mks)
9. State two reasons for testing soil (1mk)
10. State four advantages of herding (2mks)
11. Name four structural methods of soil and water conservation (2mks)
12. Name four precautions a farmer should observe when harvesting agriculture produce (3mks)
13. List four categories of individual land tenure system (2mks)
14. List three classification of pest based on mode of feeding ($1\frac{1}{2}$mk)
15. State four reasons why layering is important in crop production (2mks)
16. State four types of information that a framer can record in a dairy breeding record (2mks)
17. Name three forms of horticulture practiced in Kenya ($1\frac{1}{2}$mk)
18. Name two aspects of light that affects crop production (1mk)

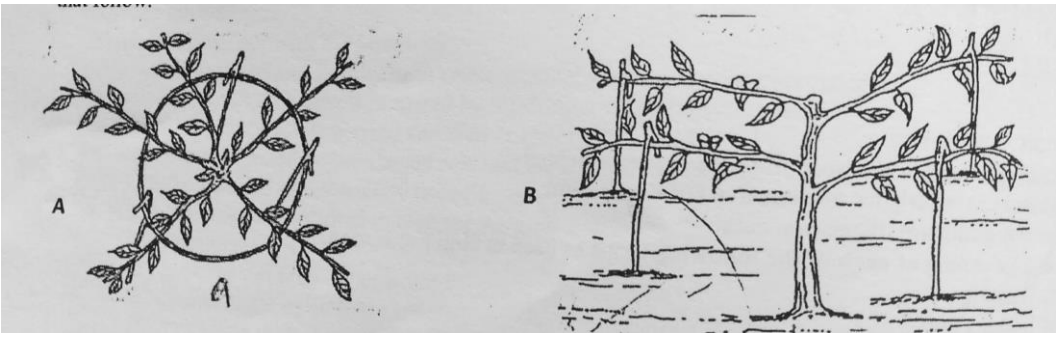
SECTION B (20MKS)
ANSWER ALL QUESTIONS IN THIS SECTION

19. Below are diagrams of common weeds found in a crop field . study them carefully and answer the questions that follow .



a. Identify the weeds (3mks)
   weed A-
   weed B-
   Weed C -
b. State one reasons why weed A is difficult to control (1mk)
c. State one economic use of weed B (1mk)

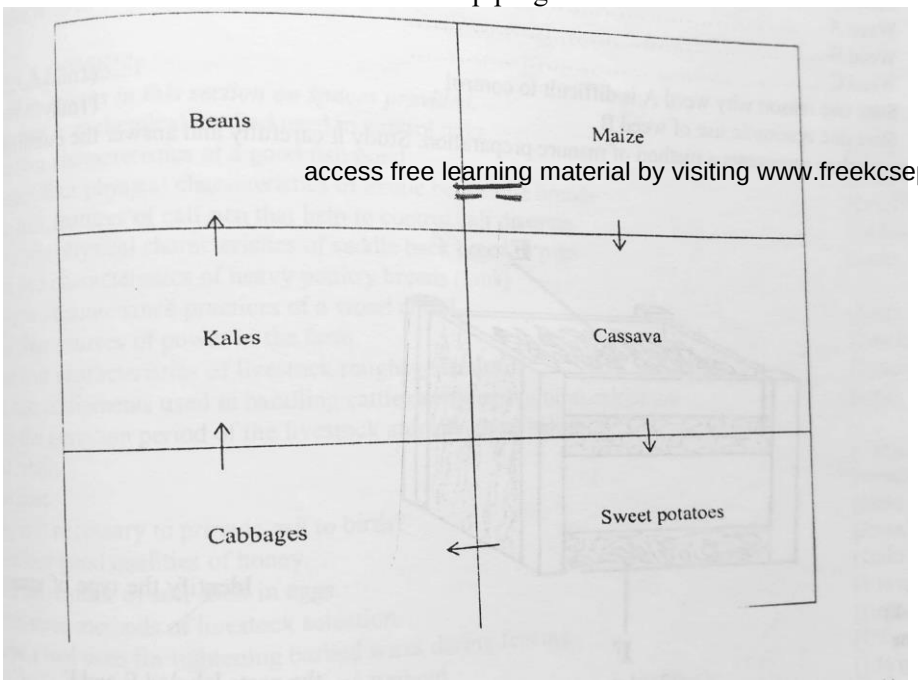
20. The following are illustrations of tea pruning methods . study them carefully and answer the questions that follows ;



i) Identify the pruning methods illustrated above (2mks)
ii) Give three reasons for pruning tea (3mks)

21. In a farm the soil was analysed and found to be deficient in all the three primary macro nutrients . It required 60kgN , 30kgP2O5 (phosphorous pentoxide) and 40kg K2O (potassium oxide) . The fertilizer available were sulphate of ammonia 20%N , single super phosphate 20% P_2O_5 and muriate of potash 50% K_2O.
a. Calculate the amount of sulphate of ammonia required (2mks)
b. Calculate the amount of muriate of potash required (2mks)
c. Calculate the fertilizer ratio of fertilizer grade NPK 20:10 (1mk)

22. The illustration below shows a crop programme



a. Identify the cropping programme (1mk)
b. Giving reasons , identify one mistake the farmer made when designing the above programme (1mk)
c. State three ways the above programme help in control of weeds (3mks)

SECTION C (40MARKS)
ANSWER ANY TWO QUESTIONS FROM THIS SECTION

23. Describe the sitting and establishment of a crop nursery
    i) Sitting (5mks)
    ii) Establishment (5mks)
    b. Describe the various cultural methods of controlling pest in crops (10mks)
24. a. State and explain how soil loses fertility (14mks)
    b. Explain six advantages of mulching in crop production (6mks)
25. a. Describe the safety precautions a farmer should take when using herbicides (10mks
    b. Explain five roles of trees in soil and water conservation (10mks)

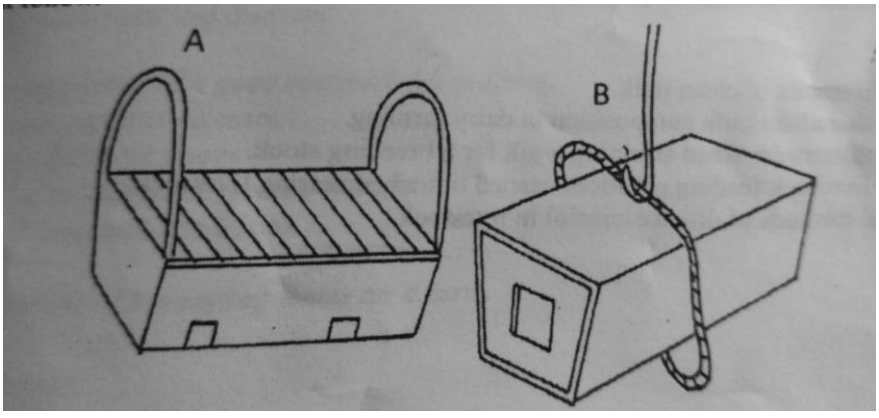
IGAMBANG'OMBE
443/2
AGRICULTURE PAPER2

SECTION I
ANSWER ALL QUESTIONS ON THIS SECTION

1. Name four rabbit breeds reared in Kenya (2mks)
2. State four structural requirement of a calf pen (2mks)
3. State six affects of ticks on cattle (3mks)
4. State four advantages of artificial calf rearing in dairy cattle management (2mks)
5. a. Name four post harvest practices in fish (2mks)
   b. State four advantages of fish farming in Kenya (2mks)
6. a. State four causes of egg eating in a flock of layers (2mks)
   b. Give two reasons for using litter in poultry house (1mk)
7. b. Name two practices that are carried out when preparing ewes for mating (1mk)
8. State four factors that determines the amount of water required by livestock (2mks)
9. What is dry cow therapy (1mk)
10. a. Give six maintenance practices of a wheelbarrow (3mks)
    b. Name two tools that are used in laying concrete blocks dairy construction of a wall (1mk)
11. List six preventive measures for livestock diseases (3mks)
12. Name four systems of a tractor engine (2mks)
13. State two functions of crop in poultry digestive system (1mk)

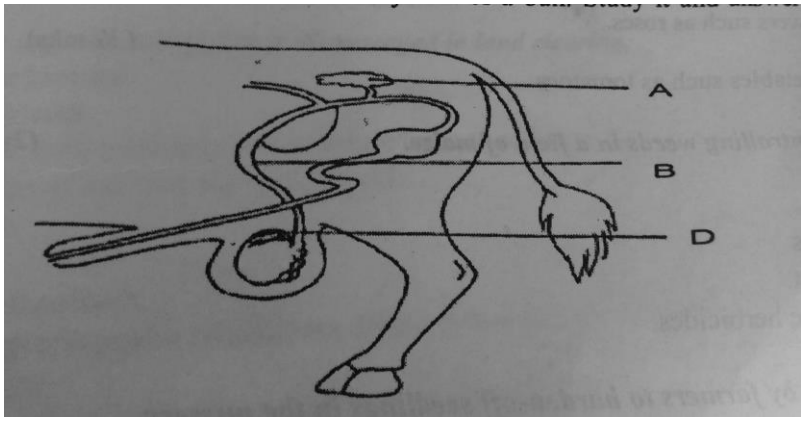
SECTION B(20MKS)
ANSWER ALL THE QUESTIONS IN THIS SECTION IN SPACES PROVIDED

14. The diagram labelled A and B below shows two types of beehives . study them carefully and answer the questions that follow



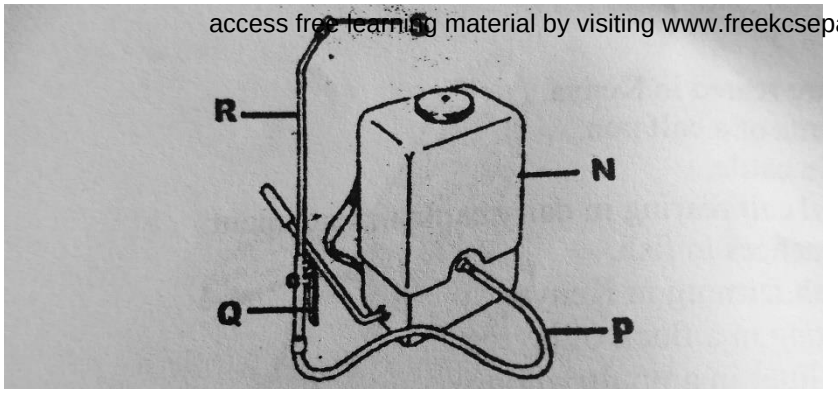
i) Identify the type of bee hive A and B (2mks)
ii) State two advantages of A over B (2mks)
iii) Give two maintenance practices for the named beehive (2mks)

15. A farmer wishes to prepare 500kg of daily ration containing 40% crude protein . he has maize meal containing 30% crude protein and bemodium cake containing 60% crude protein using a Pearson square , calculate how much desmodium cake he will include in the ratio (4mks)
16. The diagram below represents the reproductive system of a bull . study it and answer the questions that follow



a. Identify the part A, B and D (3mks)
b. What is the function of part B (1mk)
c. What is the function of the fluid secreted by part labelled A (1mk)

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



a. Name the part labelled N,P,Q and R (2mks)
b. State one function of part labelled S (1mk)
c. State four maintenance practices carried out on the above equipment (2mks)

SECTION C (40MKS)
ANSWER ANY TWO QUESTIONS FROM THIS SECTION IN THE SPACES PROVIDE .

18. a. Describe the uses of fences on the farm (10mks)
b. Give five harmful effects of liver flukes in sheep rearing (5mks)
c. Explain the factors considered when culling livestock (5mks)
19. a. Describe ten physical characteristics of poultry farmer can use to identify poor layers from a flock of hens (10mks)
b. Outline three characteristics of clean milk (3mks)
c. Explain seven factors that affects milk composition in dairy farming (7mks)
20. a. State five factors to consider when selecting a gilt for breading stock (5mks)
b. Explain three routine feeding practices carried out when rearing livestock (6mks)
c. Describe nine general methods of disease control in livestock (9mks)

KASSU MOCK
AGRICULTURE 443/1
SEPTEMBER 2021
TIME: 2 HOURS

SECTION A (30 MARKS)

1. State **two** types of labour records. (1mk)
2. List **four** climatic factors that influences crop production. (2mks)
3. Name **three** types of pipes used to convey water in the farm. ($1^1/_2$mks)
4. Give **five** causes of land fragmentation in Kenya. ($2^1/_2$mks)
5. State **four** important objectives of land tenure reforms. (2mks)
6. State **four** reasons why burning of vegetation when clearing land should be discouraged. (2mks)
7. Outline **four** importance of good soil profile in crop production. (2mks)
8. Give **three** ways of achieving minimum tillage. ($1^1/_2$mks)
9. Differentiate between the following terms;
   a. Over sowing and under sowing. (1mk)
   b. Hardening off and pricking out. (1mk)
10. List **four** environmental factors that influences the effectiveness of herbicide. (2mks)
11. State **three** importance of mulching in crop production. ($1^1/_2$mk)
12. State **two** disadvantages of basin irrigation. (1mk)
13. Give **four** effects of soil erosion. (2mks)
14. Give **four** reasons for pasture conservation. (2mks)
15. State **four** characteristics of a fertile soil. (2mks)
16. State **four** roles of calcium in crop production. (2mks)
17. Give **two** reasons why polythene sheet is used in vegetative propagation nursery unit. (1mk)

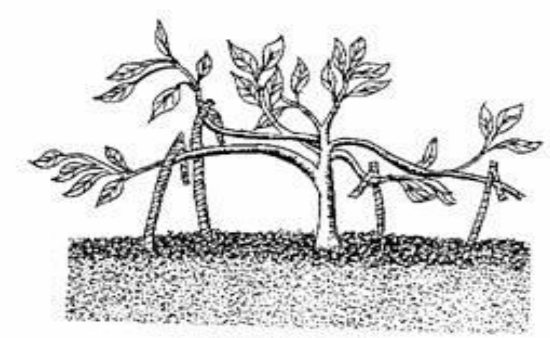
SECTION B 20MKS

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

18. A student was to apply a compound fertilizer 5:20:10 at the rate of 200kg per hectare on her Agriculture project plot measuring 3m by 4m.

    a. What do the figures 5 and 10 in the compound fertilizer stand for? (2mk)
    b. Calculate the amount of fertilizer she would require for the plot. (3mks)

19. Study the diagram below and answer the following questions.



    a. Identify the practice above. (1mk)
    b. State **two** reasons for carrying out the practice above. (2mks)
    c. State **two** disadvantages with the practice above. (2mks)

20. The following is an illustration of an infected Irish potato plant. Study it carefully and answer the questions below.

a. Identify the disease which may have caused the condition shown in the Illustration. (1mk)
b. Name any other crop which may be affected by the disease identified illustrated above. ($^1/_2$mk)
c. Mention **three** other factors which can lead to the same condition as shown by the illustration. ($1^1/_2$mks)
d. State **two** measures that can be used to control the disease illustrated above. (2mks)

21. The diagram below shows a common weed. Study it carefully and answer the questions the follows.

a. Identify the weed. (1mk)
b. Give **one** reason why the weed illustrated above is referred to as parasitic weed. (1mk)
c. Name **two** crops that the weed illustrated above commonly attack. (2mks)
d. State **one** cultural method of controlling the weed above. (1mk)

SECTION C 40MKS

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

22. a) Describe the production of carrots under the following subheadings.
    i. Land preparation. (3mks)
    ii. Planting. (3mks)
    iii. Field management practices. (4mks)
    b) State and explain the factors that determine the stage and time of harvesting crops. (5mks)
    c) State **five** effects of HIV/AIDS on Kenya's agricultural production. (5mks)
23. a) Outline **7** importance of pruning in coffee production. (7mks)
    b) Explain the precautions that should be observed during the harvesting of pyrethrum. (3mks)
    c) Give **ten** uses of farm records in the farm. (10mks)
24. a) State and explain **five** factors that determine seed rate. (10mks)
    b) Describe the procedure of transplanting a vegetable seedling. (7mks)
    c) Give **three** reasons for processing agricultural produce. (3mks)

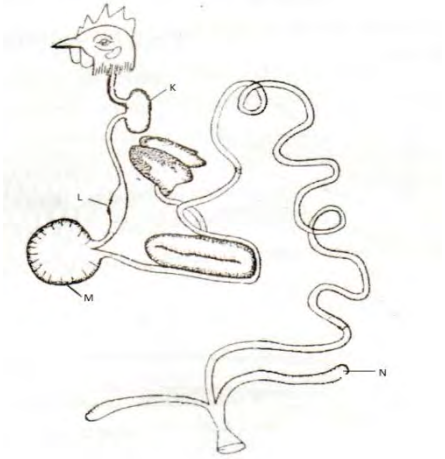
KASSU EXAMINATION 2021
443/2
AGRICULTURE
Paper 2

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

1. Give two uses of the roof of cattle dip tank. (1mk)
2. State two causes of soft shelled eggs. (1mk)
3. Give four signs of farrowing in a sow. (2mks)
4. Outline four causes of cannibalism in a flock of layers in the deep system. (2mks)
5. State four maintenance practices carried out on a Jack plane. (2mks)
6. State three uses of solar power on the farm. (1½ mks)
7. Name four types of layer breeds of chicken. (2mks)
8. Give the distinguishing characteristics of Essex and Wessex Saddle back breed of pigs. (1mk)
9. Give four symptoms of brucellsis in cows. (2mks).
10. State four reasons why inbreeding may be useful in livestock production. (2mks)
11. Give two effects of Tsetse flies on livestock. (1mk)
12. Name two types of rabbit houses. (1mk)
13. List four types of vaccines used in livestock production. (2mks)
14. Name four types of pests that affect bees. (2mks)
15. Outline three reasons why farmers dehorn cattle. (1^1/2mks)
16. a. Differentiate between cropping and harvesting as used in fish production. (1mk)
    b. Name two species of fresh warm water fish. (1mk)
17. Give four reasons for steaming up dairy cattle. (2mks)
18. List four post milking practices. (2mks)

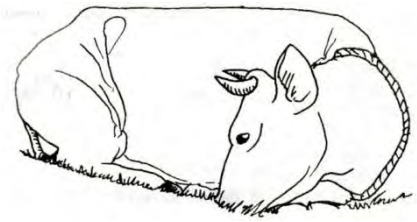
SECTION B (20 Marks)
Answer all questions in this section in the spaces provided.

19. The diagram below shows the digestive system of a chicken. Study it and answer question that follow.



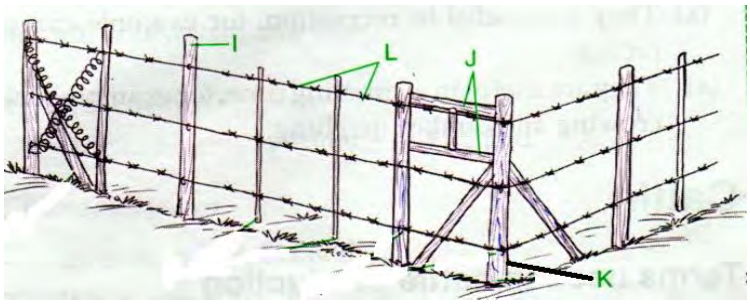
(a) . Identify the parts labeled **K.L,M** and **N** above. (2mks)
(b) . Give the function of the part labeled **M** that makes it efficient in digesting food. (2mks)
(c) . Give two characteristics of the part labeled M that make it efficient in digesting food. (1mk)

20. Study the illustration below showing an animal suffering from a disease. Study it and answer question that follow.



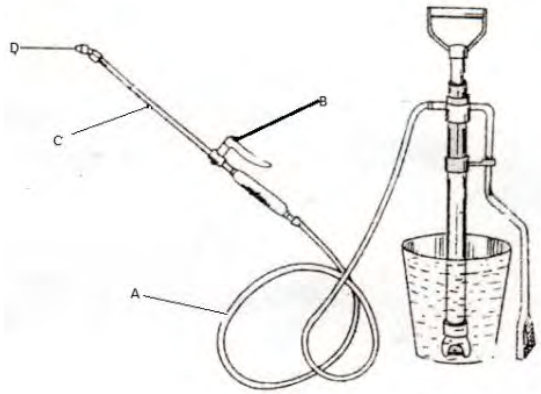
(a) .Identify the disease the animal is suffering from. (1mk)
(b). What causes the disease shown above? (1mk)
(c). Give three symptoms shown by a cow suffering from the disease above. (3mks)

21. Study the farm structure shown below and answer questions that follow.



(a) . Identify the structure shown above. (1mk)
(b) . Name the parts labeled **I,J,K** and **L**. above. (2mks)
(c) . Give two disadvantages of using the structure above in pasture fields. (1mk)

22. The diagram below shows a stir up pump. Study it and answer questions that follow.



(a). Name the parts labeled **A,B,C** and **D**. (2mks)
(b). State two maintenance practices that should be carried out on the equipment illustrate above (2mks)
(c). State one disadvantage of using the equipment above in controlling ticks. (1mk)

SECTION C (20 Marks

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

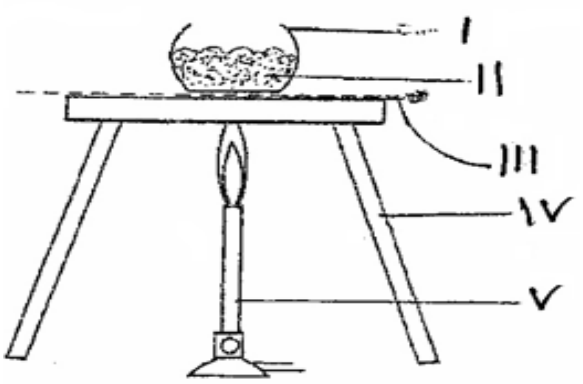
23. (a) . Describe Newcastle disease under the following sub headings
(i) Causal organism (1mark)
(ii) Symptoms (6marks)
(iii) Control measures (3marks)
(b) State and explain the requirements of a deep litter home in poultry (10marks)

KAPSABET BOYS HIGH
443/1
AGRICULTURE PAPER 1
(THEORY)

1. State t**wo** methods which can be used to detect mineral deficiency in crops. (lmk)
2. State **two** conditions under which shifting cultivation is favourable. (lmk)
3. State t**wo** conditions under which seeds are seeded at a high seed rate. (2mks)
4. State **three** ways in which trees improve soil fertility. (1 $^{1}/_{2}$ mks)
5. Give **three** causes of hardpans in cultivation. (1 $^{1}/_{2}$ mks)
6. Under what **two** conditions does opportunity cost not exist? (lmk)
7. Give **two** roles of additives in silage making. (lmk)
8. Outline **four** advantages of mixed farming. (2mks)
9. Give **three** reasons why bulbils make good planting materials than suckers. (2mks)
10. Give **three** reasons why agriculture is defined as a science. (1 $^{1}/_{2}$ mks)
11. Give **four** characteristics of large scale farming system. (2mks)
12. State **four** farming practices which help to improve soil structure. (2mks)
13. Give **four** effects of top dressing on a pasture. (2mks)
14. What are the two reasons for innoculating legume seeds before planting . (1mk)
15. State **two** advantages of carrying out pruning in banana production. (1mk)
16. In maize hybrid 614 what do the following figures stand for? (1mk)
    (i) 6……
    (ii) 4…….
17. Give **two** ways in which pastures are classified. (1mk)
18. Name **four** practices carried out to improve and maintain permanent pasture. (2mks)
19. Give **four** advantages of tissue culture. (2mks)
20. Give **three** stages of controlling devils horsewhip by mechanical means. (1½ marks)

SECTION B

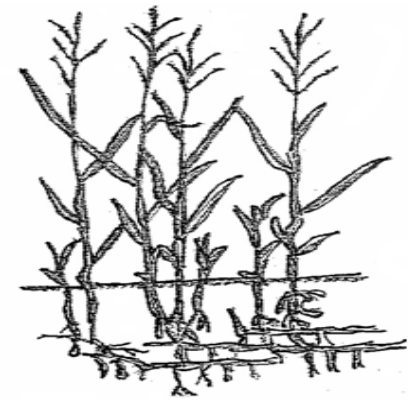
21. The diagram below shows a set up of apparatus for finding the percentage of humus contents in a soil by ignition.



(a) Label the apparatus. (2 marks)

(b) Outline the steps followed in carrying out the illustrated experiment. (3 marks)

G



H

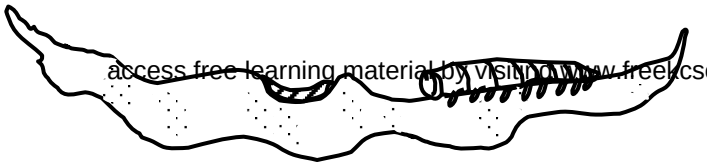
22.

(i) Identify the weeds above. (2 marks)

(ii) State the economic importance of the weed shown in diagram **G**. (2 marks)

(iii) Why is it difficult to control weed in diagram **G**? (1 mark)

23. Study the pest below and answer the questions below.



(a) Identify the pest (1 mark)

(b) State two methods of controlling the pest. (2 marks)

(c) Name the crops attacked by the pest. (2 marks)

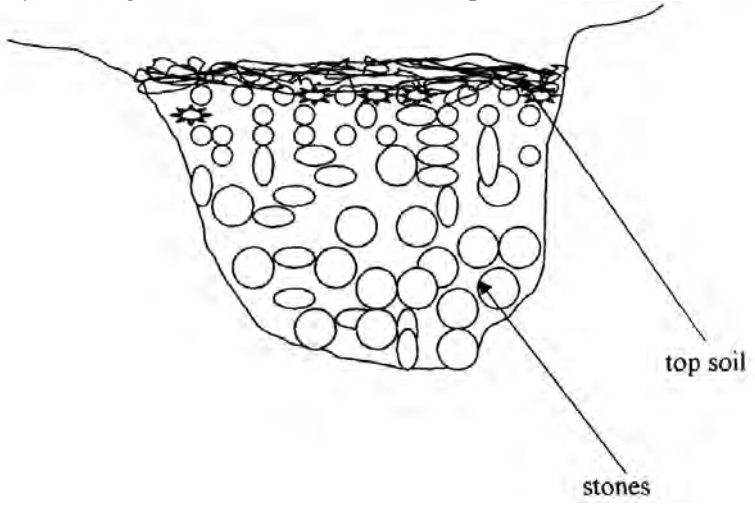
24. The diagram below illustrates a field management practices in tomatoes

(i) Identify the practice (1 mark)

(ii) State three reasons for carrying out the practice. (3 marks)

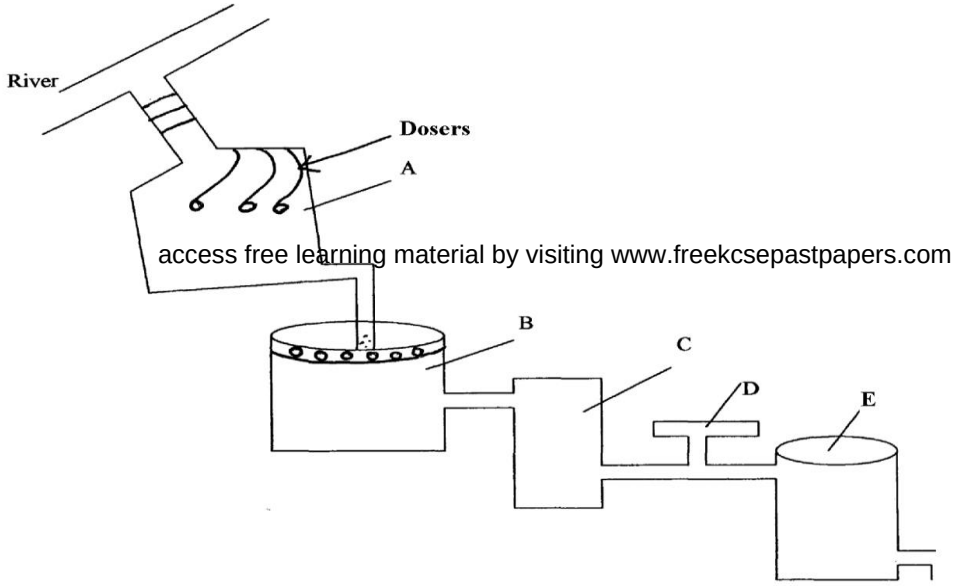
(iii) Give another practice that could be carried out to give the same results. (1 mark)

25. Study the diagram below then answer the questions that follow:



(a) Identify the method of drainage above. (1mk)
(b) State other **three** methods used to drain swampy areas. (3mks)
(c) Give **four** importance of drainage. (4mks)

26. Study the processes of chemical water treatment below and answer the questions that follow:



(a) Identify the parts labeled: (2mks)
(b) State **two** chemical substances added at part labeled B and give their functions. (2mks)
(c) State **two** factors which influence the quantity of the chemical used in part labeled D**.** (2mks)
(d) State **three** uses of water in crop production. (3 mks)
(e) State **three** types of production functions in agriculture. (3mks)

SECTION C (20MKS)

27. (a) Describe the cultural methods of weed control in crop production. (l0mks)
(b) Describe the harmful effects of pests on crops (10mks)
28. (a) Discuss the human factors which influence agriculture. (10 marks)
(b) Explain **five** factors to consider when choosing the planting time. (10 marks)
29. Describe the production of carrots under the following sub headings
a) Seedbed preparation (3 marks)
b) Harvesting (4 marks)
c) Explain five cultural methods of weed control in beans production. (10 marks)
d) Outline three roles of sulphur in crop production. (3 marks)

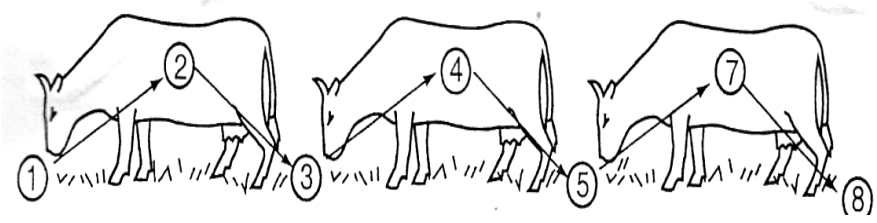
KAPSABET BOYS HIGH
443/2
AGRICULTURE PAPER 2
(THEORY)

1. What is apiculture? (1 mark)
2. **Name one** livestock disease that is transmitted by the following parasites.
   (a) Brown ear tick (½ mark)
   (b) Tsetsefly (½ mark)
3. State the intermediate host for liver fluke Fasciola spp. (½ mark)
4. **State four** breeds of rabbits. (2 marks)
5. **State two** functions of a crop in a digestive system of chicken. (1 mark)
6. **State three** ways of restraining cattle (1½ marks)
7. **State two** livestock diseases caused by virus. (1 mark)
8. **State two** types of selection practiced by livestock farmers (1 mark)
9. **State three** ways of preventing predation in a fish pond (1mark)
10. **State four** functions of feed additives in livestock production. (2 marks)
11. **State two** types of calf pens. (1 mark)
12. State advantages of embryo transplant. (2 marks).
13. **State two** roles of testis in male reproductive system. (1 mark).
14. **Differentiate** between mothering ability and prolificacy (2 marks)
15. **State three** ways in which feeding contributes to disease control. (1½ marks)
16. **State two** functional differences between rumen and abomasums. (2marks)
17. Name four practices carried out in the crush (2 mks)
18. Give three dual purpose cattle breeds (1½ mks)
19. Give three terms used to describe the following: - (1½ mks)
    (i) Mature male pig .....
    (ii) Sterilised birds .....
    (iii) Mature female goat .....

20. State four reasons for identifying farm animals (2mks)
21. State two factors that determine the quality of honey (1mk)
22. Give four categories of livestock diseases (2 mks)
23. Name three tools used for plumbing (1½ mks)
24. State two maintenance practices carried out on an ox-drawn plough (1 mk)
25. List two sources of farm's power which are environmental friendly (1 mk)
26. State four functions of the lubricating system in a tractor (2mks)
27. State two conditions under which a farmer would prefer to use an ox-cart instead of a tractor-drawn trailer (1mks)
28. State four qualities considered when selecting a heifer for dairy purposes (1mks)
29. Give one role of a damp proof course in the foundation of a farm building (1mk)

SECTION B (30MKS)

30. The illustrations below represents the stages of development of a three –host tick. Study it carefully and then answer the questions that follow:

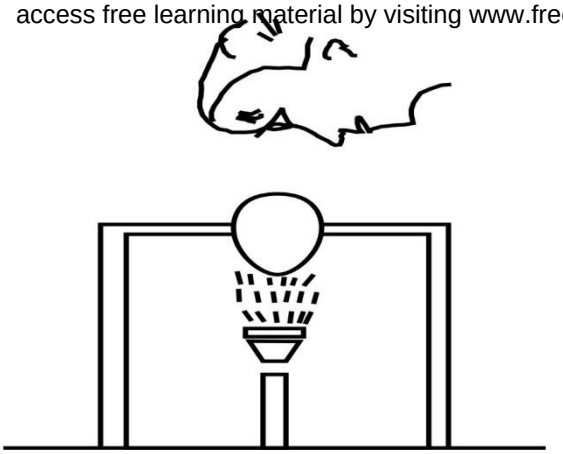


(a) Briefly explain what is happening in the following stages 1,4,5 & 7 (4 marks)
(b) Why do you think that tick control is difficult using acaricides? (1 mark)
(c) Name the most common sites the tick can be found on the body of an animal. (2 marks)
(d) Give **two** examples of a three host tick (1mark)

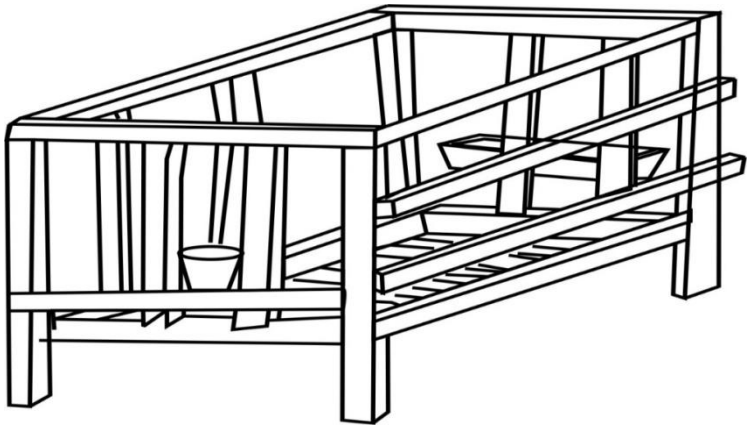
31. The diagram below illustrates a certain practice carried out in sheep management. Study carefully and answer the questions that follow

(i) Identify the practice illustrated above (1mark)
(ii) State two precautions a farmer should put into consideration when carrying out this practice. (2marks)
(iii) How often should the practice be carried out? (1mark)

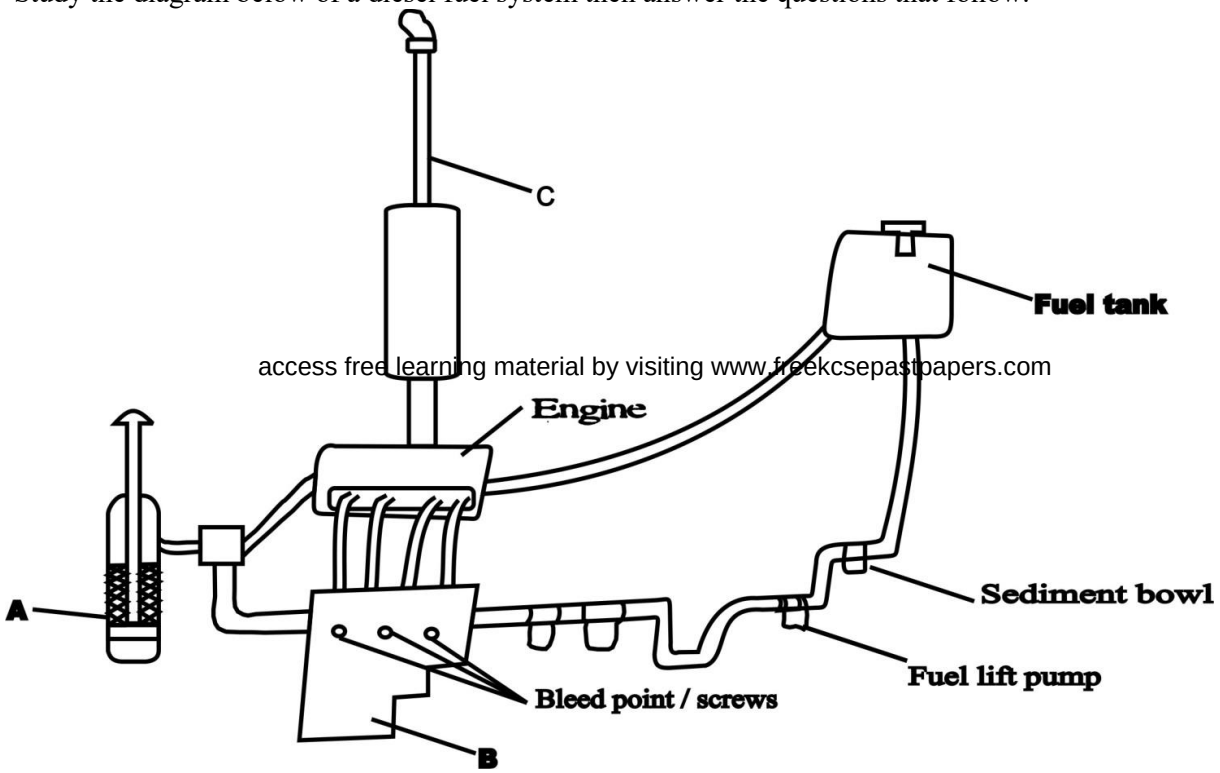
32. Below in an activity carried out in poultry production. Study it carefully then answer the questions that follow.



a) Identify the practice being carried out..... (1 mk)
b) State three defects that can be detected by this practice (3 mks)
c) State two disadvantages of artificial incubation. (2 mks)



33. Use the above diagram of a calf pen to answer the questions that follow.
    a) How high should the calf pen be raised from the ground (1mk)
    b) Give any two reasons why calves are housed singly (2mks)
    c) Why should the calf pen be near the milking parlour? (2mks)
34. Study the diagram below of a diesel fuel system then answer the questions that follow.



    a) Identify the parts labelled (3 mks)
    b) State three maintenance practices carried out on the system (2mks)
35. Outline the procedure of proper milking technique (3 mks)

SECTION C (20MKS)

36. a) Outline five signs of heat in a cow (5 mks)
    b) Outline five causes of stress in poultry and describe their control (10mks)
    c) Using Pearson's square compute a ration with 20% DCP from oats which contains 10% DCP and simsim seedcake containing 60% DCP. (show your working) (5mks)
37. a) Outline the daily maintenance practices that should be carried out on a farm tractor (8 mks)
    b) Outline twelve general symptoms of endoparasite attack in livestock. (12 mks)
38. a) State four advantages of using a sub soiler in seedbed preparation (4mks)
    b) Give five advantages of artificial insemination in cattle management (5mks)
    c) State five function of water in animal's body (5mks)
    d) Describe control measures for tape worm in livestock (6mks)

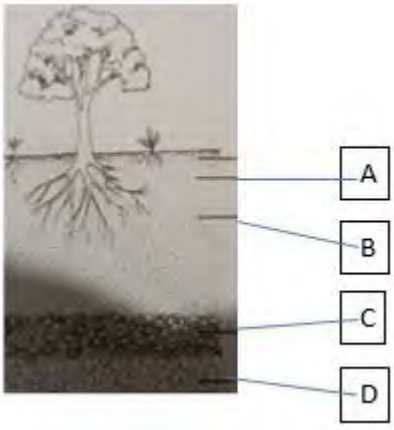
KIGUMO CLUSTER
AGRICULTURE
443/1
DECEMBER 2021

Section A- 30 Marks; Answer all the questions in this section in the spaces provided

1 . Outline **four** activities that enable agriculture to be classified as a science (2mk)
2. State **four** characteristic of a good site for a nursery bed (2 mks)
3. Give **four** reasons for intercropping (2 mks)…
4. Give **four** reasons why burning of land is discouraged (2 mks)
5. State **four** advantages of using certified seeds (2 mks)
6. List **four** characteristics of extensive farming system (2mk)
7. State **four** positive effects of wind in crop production (2mk)
8. State **four** benefits of adding organic manure to an acidic soil (2mk)
9. State **four** factors that determine the stage at which a crop is harvested. (2mk)
10. State f**our** advantages of applying lime as a measure of improving soil condition (2 mks)
11. State four factors that influence the number of secondary cultivation in seedbed preparation (2 mks)
12 State **four** negative effects of burning as a method of bush clearing (2mk)
13. State **four** disadvantages of minimum tillage (2mk)
14. State **four** factors that increase seed rate in crop production (2mk)
15. State **two** conditions when opportunity cost exists (1mk)
16 Differentiate between **nitrogen fixation and phosphorus fixation** as used in agriculture (2mk)

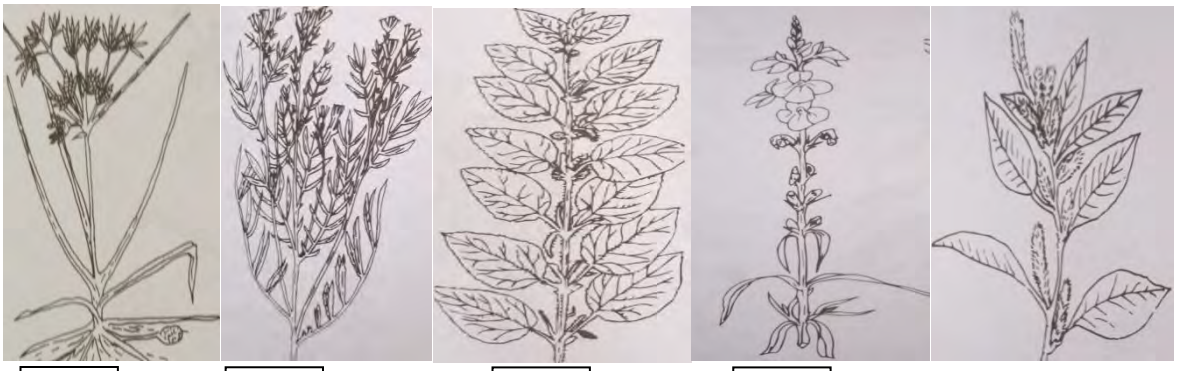
SECTION B-20 MARKS;
Answer all questions in this section.

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



i) Name the layers labelled A, B, C and D (2 marks)
ii) State four significance of layer labelled A (2 marks)
iii) State how layer B can be improved for better crop production. (1 marks)

18. The diagrams below illustrate common weeds found in cultivated crop fields.
Study them carefully and answer the questions that follow.

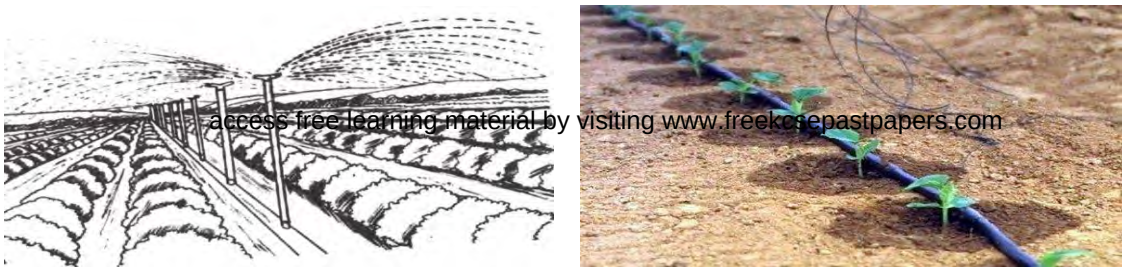


F G H I J

i) Name the weeds labelled F, G and H (1 ½ marks)
ii) State one reason that makes weed F difficult to control (1 mark)
iii) State the one economic importance of each of the weeds (1 ½ marks)
iv) State two cultural methods for controlling weed I (1 mark)

19. The diagrams below show two types of irrigation please insert type

A B



a) Name the type of irrigation illustrated (2mks)
b) State two conditions that promote the use of the type of irrigation illustrated in A (2mks)
c) List two disadvantages of using method A of irrigation over method B (2mks)
d) Name two other types of irrigation other than those shown above (2mk)

20. The proprietors of Mareira farm made the following transactions in the year 2020;
Purchase of feeds-2000,Purchase of seeds-1000,Purchase 0f fertilizers -1300,Fuel-1500,Disc plough100, 000,Sale of cabbages-35000,Sale of wheat-40000,Sale of milk-10000,Opening valuation was 120000,Closing valuation was 160000 andDebt receivable of 6000 for firewood delivered to a neighbouring farm.
Using the above information, prepare a profit and loss account for the farm for the year ending December 2020.
Did the farm make a profit or a loss (1 Mark)

SECTION C -40 Marks; Answer any Two Questions in this Section

21. (a) State **five** disadvantages of communal land tenure system answer (5 mks)
(b) State and explain **five** methods of drainage in agricultural land (10mks)
(c) xplain **five** factors considered in a crop rotation program (5mks)

22. (a) State and explain **five** Importance of agriculture in Kenyan economy (10mks)
(b) Describe the agronomic production of tomatoes under the following subheadings;
i) Transplanting of tomato seedlings. (10mks)

ii) Field management practices (5 marks)
iii) Describe **five** ways in which biotic factors influence agricultural production (5mks)

23. a) State **five** importance of budgeting in a farming enterprise (5 marks)
b) State **five** ways through which farmers adjust to risks and uncertainties (5 marks)
c) State **five** ways in which labour productivity can be improved in the farm (5 marks)
d) State **five** importance of a title deed to a farmer (5 marks)

KIGUMO CLUSTER
AGRICULTURE
443/2
DECEMBER 2021

SECTION A(30MARKS) ANSWER ALL THE QUESTIONS .

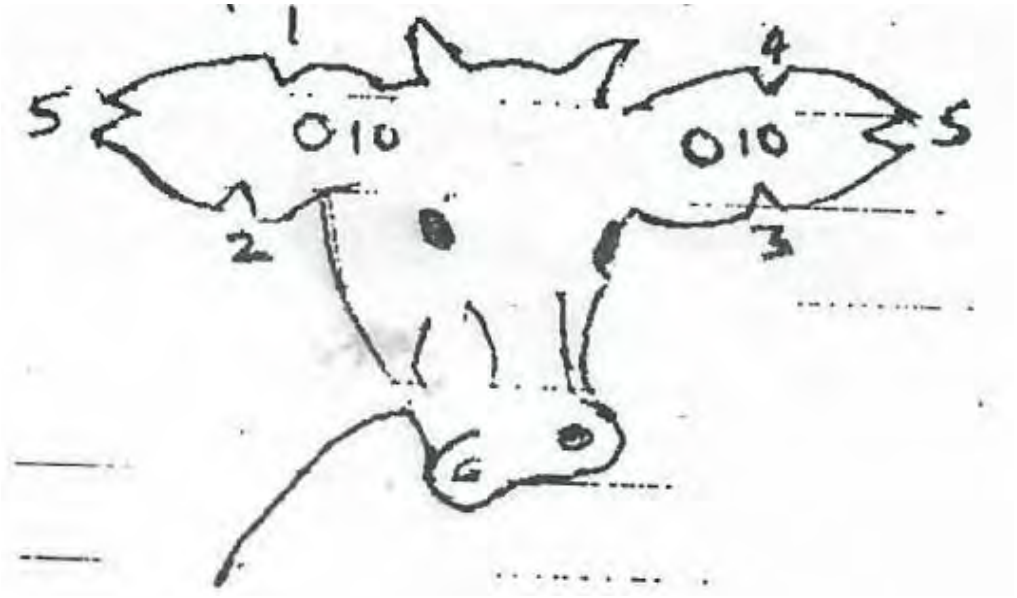
Q1. State **four** functions of water in the body of livestock animals. **(2marks)**
Q2. Differentiate between essential and non-essential amino acids. **(1marks)**
Q3. Give **two** reasons for turning eggs regularly during incubation? **(1mk)**
Q4. Name **two** functions of the crop in the digestive system of chicken. **(1mk)**
Q5. State **four** factors considered when computing a livestock ration. **(2marks)**
Q6. Why is raddling essential in sheep management? **(1mark)**
Q7. State **four** advantages of battery cage system of poultry rearing. **(2marks)**
Q8. Give a reason why the animal should not be released to the pasture when freshly sprayed with accaricide wash. **(1mk)**
Q9. Name **two** major methods of administrating drugs to livestock. **(1mark)**
Q10. Outline **four** methods used to handle livestock. **(2marks)**
Q.11. State two ways in which good nutrition help to control diseases in livestock. **(1mark)**
Q.12. Give **two** reasons for flushing in sheep. **(1mk)**

Q.13. Give **three** factors that affect the quality of honey. **(1 ½ mark)**
Q.14. State **three** conditions that make a cow to withhold milk during milking**.** **(1 ½ mark)**
Q.15. Name the most appropriate tools used in the following operations. **(2marks)**
i. Removing metal chipping on a file.-**.....**
ii. Cutting wood along the grain**.....**
iii. Branding**.....**
iv. Detaching honey combs during honey harvesting**.....**….
Q.16. State **four** causes of infertility in cows. **(2marks)**
Q.17. List **four** maintenance practices carried out on a disc plough. **(2marks)**
Q. 18. a) Name a protozoan disease that is not transmitted by a vector**.** **(½ marks)**
b) Name one vector that transmits each of the following diseases. **(1mark)**
i. Anaplasmosis-**.....**
ii. East coast fever-**.....**
c) Define the term quarantine as used in livestock production. **($^{1}/_{2}$ marks)**
d) What is the effect of petroleum jelly smeared on combs and wattles of birds? **(1mark)**

Q.19. List down **four** short term services practices done on a tractor**.** **(2marks)**

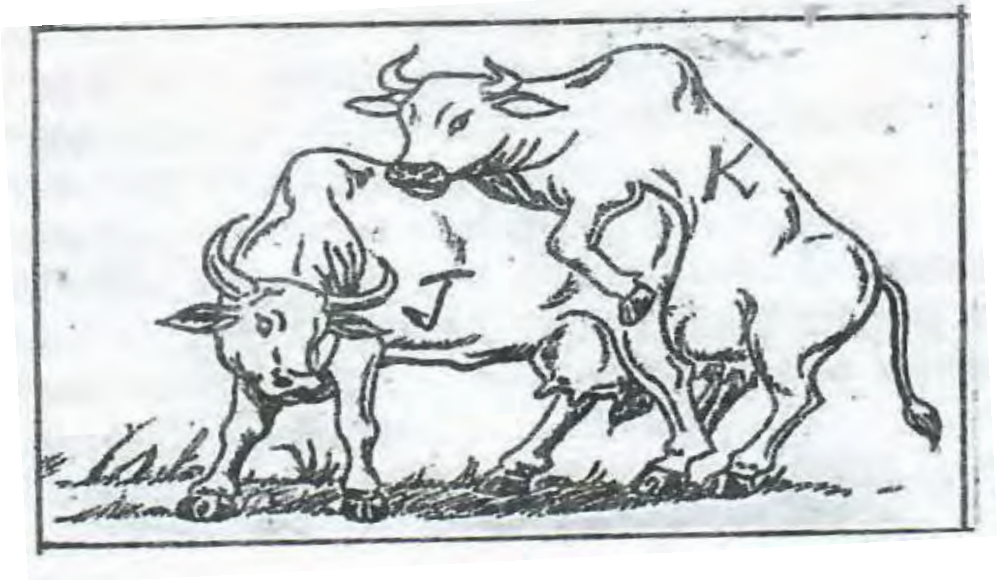
SECTION B(ANSWER ALL QUESTIONS IN THIS SECTION)

Q. 20 . The diagram illustrates a method of identification in livestock.



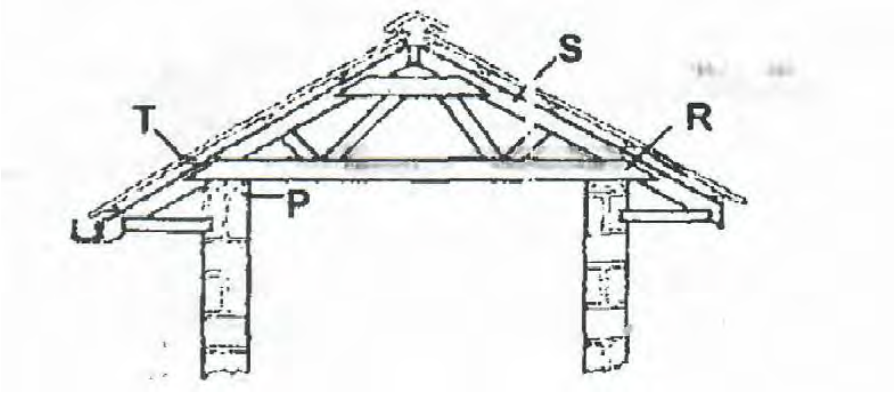
a) Name the type of identification illustrated on the diagram. **(1mk)**
b) Give the identification number of the animal illustrated on the diagram. (**1mk)**
c) using diagram, illustrate how you can identify animal numbers 36 and 24. (**2mks)**
d) Apart from this method of identification, give t**wo other** methods used in livestock to achieve the same purpose.

Q.21. Study the diagram below and answer questions that follow.



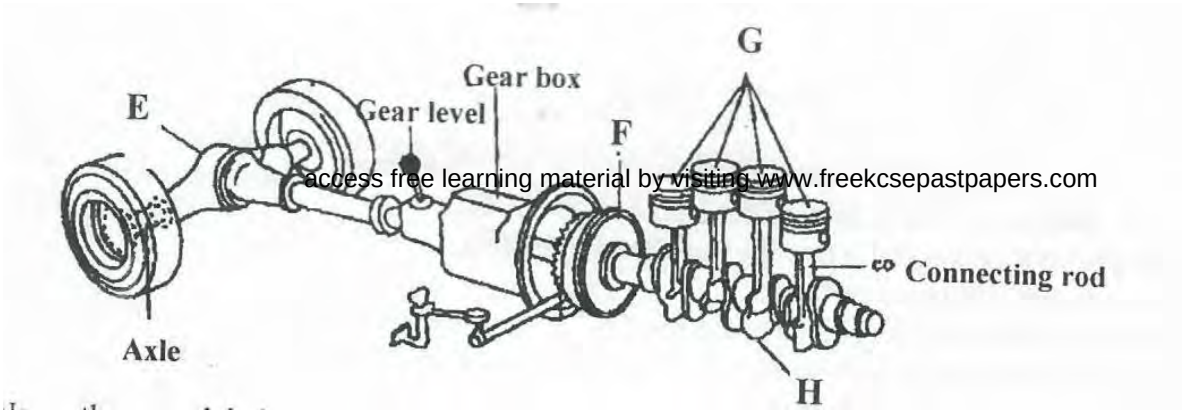
a) Which of the above cows shows the signs of heat. **(1mark)**
b) Give **one** reason to confirm your answer (a) above. **(1mark)**
c) State **two** benefits of natural mating system. (**2marks)**
d) Name a disease that is easily spread by this method of mating. **(1mark)**

Q.22. The following diagram shows a part of a roof. Study it carefully and answer the questions that follow.



a) Name the parts labelled P, T, R and S. **(2marks)**
b) State the functions of P and T. **(2marks)**
c) Give **two** chemical preservatives for treating timber before use in the construction of farm structures

Q.23. Below is a diagram of power transmission system of a tractor engine study it and answer the questions that follow.



a) Name the parts labeled E, F, G and H. ***(2marks)***
b) State the function of E and H.
c) State **two** precautions when handling farm tools and equipment ***(2marks)***

NAMBALE ACK JOINT EXAM 2021
AGRICULTURE 443/1
NOVEMBER 2021

SECTION A (30 MARKS)

1. State **two** conditions under which opportunity cost is zero. (1mk)
2. Name **three** branches of horticulture. $(1\frac{1}{2}mks)$
3. State **four** factors a farmer should consider when choosing the farming system to undertake. (2mks)
4. State **four** disadvantages of communal land tenure system. (2mks)
5. Give **four** pieces of information found on a land title deed. (2mks)
6. State **four** reasons for deep ploughing during land preparation. (2mks)
7. State **four** characteristics of a good top soil. (2mks)
8. Give **three** reasons for sub soiling. $(1\frac{1}{2}mks)$
9. Differentiate between seed inoculation and seed dressing. (1mk).
10. State **four** effects of soil erosion. (2mks)
11. Outline **four** practices necessary to improve and maintain permanent pastures. (2mks).
12. State **two** causes of poor drainage on farmland. (1mk)
13. State **four** reasons for mulching. (2mks)
14. Give the function of each of the following in the preparation of compost manure. (2mks))
    a) Top soil
    b) Well rotten manure
    c) A thin layer of wood ash
    d) Long pointed stick
15. State **four** deficiency symptoms of phosphorus. (2mks)
16. State **four** characteristics of nitrogenous fertilizers. (2mks)
17. State **four** reasons why a nursery is important in crop production. (2mks)

SECTION B (20 MARKS)

18. The table below shows output of maize in response to increase in D.A.P fertilizers on one hectare of land.

Fixed input land (in ha)	Variable input D.A.P in 30kg-bag	Total product maize yield in 90-kg bag	Average product (AP) maize in 90kg bag	Marginal product (M.P) in 90kg bag
1	0	2	-	-
1	1	5	-	-
1	2	14	-	-
1	3	21	-	-
1	4	26	-	-

    a) Fill in the table for average product (A.P) and marginal products (M.P) (5mks)

19. The diagrams below illustrate irish potato seed preparation before planting. Study it carefully and answer the questions that follow.


(a) Before the Practice.


(b) After the Practice.

    a) Name the practice used in preparing the seed potato above before planting. (1mk)
    b) Describe the procedure followed in preparing the seed potatoes for planting. (3mks)
    c) Give **one** reason for carrying out the practice named above. (1mk)

18. The photograph below shows an irish potato plant attacked by a disease. Study it and answer the questions that follow.

a) Identify the disease represented by the photograph. (1mk)
b) Name the causative agent of the diseases. (1mk)
c) Give **one** other crop that can be attacked by the same disease. (1mk)
d) List **two** control measures of the disease. (2mks)

19. The photographs below show common weeds C and D in pasture land. Study them carefully and answer the questions that follow.

C D

a) Identify weeds C and D. (2mks)
b) Classify weed D according to plant morphology. (1mk)
c) State the major problem posed by each of the weeds above in pasture land. (2mks)

SECTION C (40MARKS)

20. a) State **four** benefits of sowing annual crops early. (4mks)
b) Describe **eight** effects of fragmentation and sub division of land. (8mks)
c) Explain **eight** effects of weeds. (8mks)
21. a) Describe the various field management practices for tomatoes. (8mks)
b) State the precautions that should be observed when harvesting cotton. (4mks)
c) Explain **four** importance of crop rotation. (8mks)

24. The information below is on the financial and Asset valuation of school Farm at the end of the year 2002

Debts Payable	80,000/=
Dairy cattle	55,000/=
Maize in store	19,000/=
Buildings	125,000/=
Beans in store	4,000/=
Calves	5,000/=
Mature sheep	7,000/=
50 ha of land	260,000/=
Machinery	180,000/=
Cattle feed in store	4,000/=
Office Equipment	1,400/=
Tools in store	10,000/=
Bank Deposit	50,000/=
Debts receivable	11,000/=
KFA Loan	210,000/=
Bank Loan	100,000/=
Wages	41,200/=
Electricity Bills	100,500/

a) Draw up a balance sheet for the farm as at 31st Dec. 2002 using the above information. (12mks)
b) Determine the solvency of the farm, giving reasons. (1mk)
c) Describe **seven** reasons why farmers need to keep good farm records. (7mks)

NAMBALE ACK JOINT EXAM 2021
443/2
AGRICULTURE Paper 2
(THEORY)

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

1. State the class of each of the following feedstuff (1 mk)
   i. Molasses …….
   ii. Maclick …….
2. State one way by which each of the following practices help in disease control (2 mks)
   a. Proper feeding
   b. Proper housing
3. Name a disease in cattle that may be spread through breeding (1 mk)
4. Name two implements that may be connected to power take off shaft of a tractor (1 mk)
5. Differentiate between the following tools (2 mks)
   a. Marking gauge and mortise gauge
   b. A cold chisel and a wood chisel
6. Study the table below and fill in the missing words (2 mks)

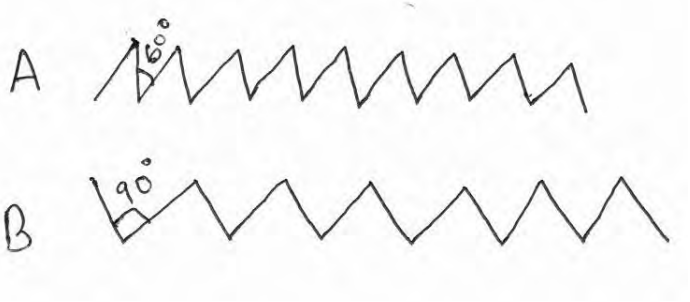
Description	**Cattle**	**Pigs**	**Poultry**
Young from birth/ hatching			Chick
Young female before parturition / laying		Gilt	

7. Name one intermediate host for each of the following parasites (1 mk)
   a. Liverfluke (Fascola spa)
   b. Tapeworm (Taenia spp)
8. State four ways of restraining cattle during routine management (2 mks)

9. A deep litter poultry house measures 9m by 3m. Suppose the amount of space allowed for one bird is $0.27m^2$, calculate the number of birds that can be kept comfortable in the house.
   Show your working (2 mks)
10. State four predisposing factors of mastitis (2 mks)
11. Name any two hormones associated with milk let down in cattle (1 mk)
12. State two reasons under which would make it necessary to feed bees (1 mk)
13. State three effects of tsetsefly infestation (3 mks)
14. Give one reason for packing eggs with the broadside facing upwards in an egg tray (1 mk)
15. List four strokes in a four stroke cycle engine (2 mks).
16. State four reasons why feeding of colostrum is important in rearing of piglets (2 mks)
17. List two factors associated to the animal that determines the amount of feeds taken by animals (2 mks)
18. Give two signs that would show that a doe is just about to give birth (2 mks)

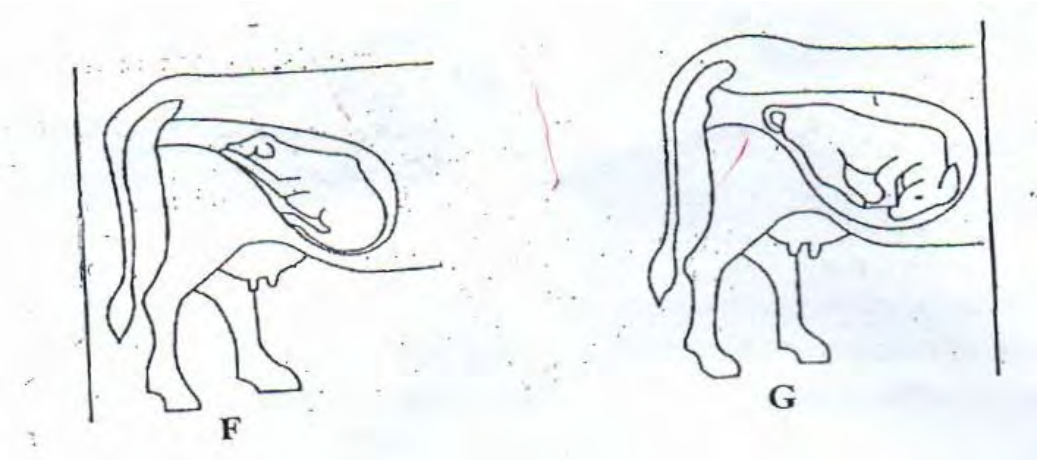
SECTION B (20 MARKS)
Answer all questions in this section

19. The diagrams labelled A and B below shows the teeth arrangement in hand workshop tools.



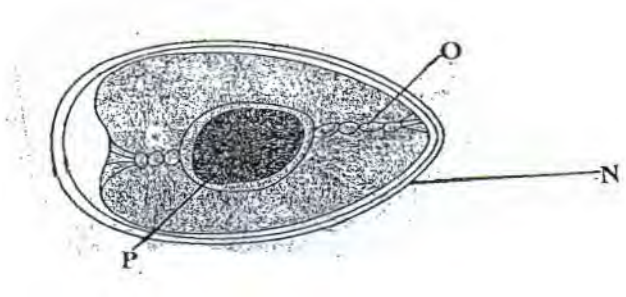
   a. Identify the tools represented with the teeth arrangements A and B (2 mks)
   b. Give one function of each the tools mentioned above (1 mk)
   c. Give two management practices done on the above tools (2 mks)

20. Study the diagram below and use them to answer the questions that follow.



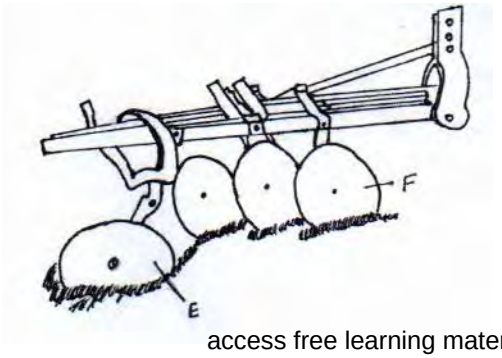
   a. Which of the foetus is in the correct position of parturition (1 mk)
   b. Name the type of parturition for foetus F and G (2 mks).
   c. Give two problems associated with parturition in cattle (2 mks)

21. Study the diagram of an egg below and answer the questions that follow.



a. Name the parts labelled (3 mks)
b. State the functions of parts labelled (2 mks)

22. The diagram below represents a tractor implement.



i) Identify the implement (1 mk)
ii) Name the parts labelled E and G (2mks)
iii) State 2 maintenance practices carried out on the implement shown in the diagram (2 mks)

SECTION C (40 MARKS)
Answer only two questions in this section.

23.
a. Explain factors to consider when siting farm structures (5 mks)
b. Describe foot rot disease in sheep under the following subheadings
   i. Symptoms (4 mks)
   ii. Control measures (6 mks)
c. State the disadvantages of using animal power on the farm (5 mks)

24. .
a. Describe the components of a spray race (5 mks)
b. Describe the characteristics which will be considered when selecting a gilt for breeding (5 mks)
c. Discuss the maintenance practices carried out on a tractor (10 mks)

25. .
a. Describe the procedure of honey harvesting in a Kenya top bee hive
b. Describe the digestion in the rumen in a ruminant animal (5 mks)
c. Discuss the factors that influence output of fish in a fish pond (5 mks)
d. Mention five precautions taken when using workshop tools. (5 mks)

LANG'ATA/KIBRA CLUSTER
443/1
AGRICULTURE
PAPER 1

SECTION A(30MARKS)

Answer ALL questions in this section

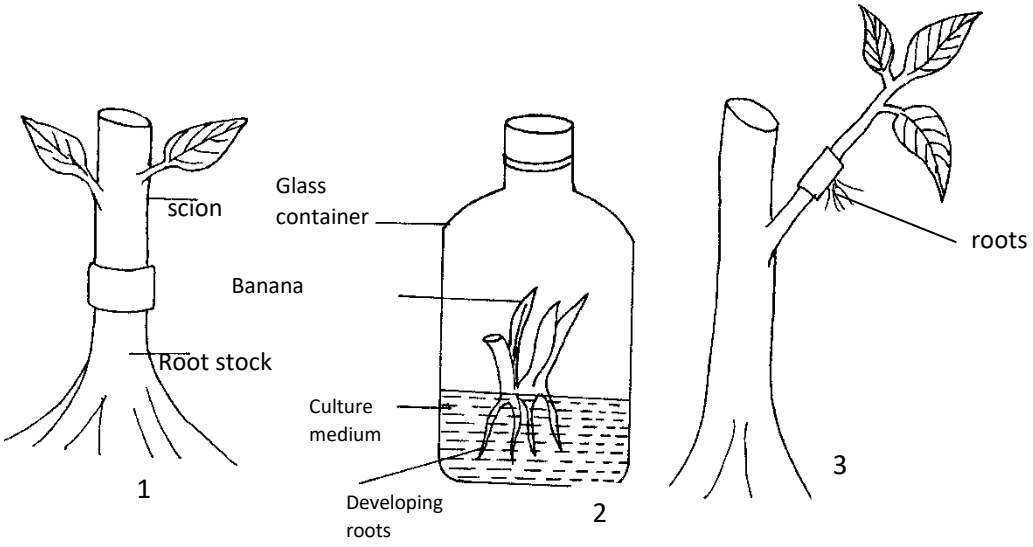
1) Name a chemical used to achieve the following during water treatment.
   (a) Coagulation of solid particles (½mark)
   (b) Softening of water (½mark)
   (c) Killing pathogens (½mark)
2) State **two** causes of forking in carrots (1mark)
3) Name **four** books of account kept by a farmer (2 mark)
4) Give the element whose deficiency in plants is characterized by the following
   (a) Interveinal chlorosis of the leaves ..... (½ mark)
   (b) Blossom end rot in tomatoes ..... ($^1/_2$mark)
   (c) Scorched edges of a leaf ..... (½ mark)
5) Give **two** roles of agriculture in industrial growth. (1 mark)
6) Difference between olericulture and pomoculture (1 mark)
7 a) Give **two** disadvantages of hydram pumps (1 mark)
   b) State **two** methods of harvesting Maize (1 mark)
8) a) What is Agro forestry. (1mark)
   b) State **four** ways in which Agro forestry is important. (2marks)
9) Give **four** farming practices that may help in achieving minimum tillage. (2 marks)
10) Define the term "Economic Injury Level" of a crop. (1 mark)
11) State **two** conditions when opportunity costs are zero (1 mark)
12) State **four** factors that influence solifluction (2 marks)

13) Give **four** conditions that necessitate clearing of land. (2 marks)
14) Give **four** reasons for keeping health records (2 marks)
15) Name any **two** diseases that affect bean production in the field. (1 mark)
16) State **four** benefits of crop rotation (2 marks)
17) State **four** management practices in a vegetable nursery (2 marks)
18) Give **four** methods of land reform practiced in Kenya (2mks)

SECTION B (20 MARKS)

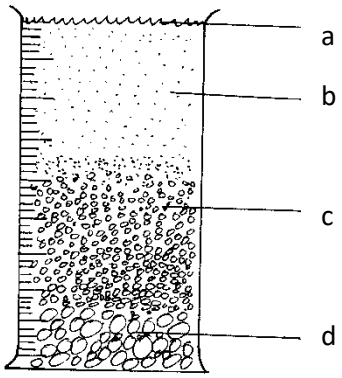
Answer ALL the questions in this section in the spaces provided.

19. Study the methods of crop propagation illustrated below and answer the questions that follow



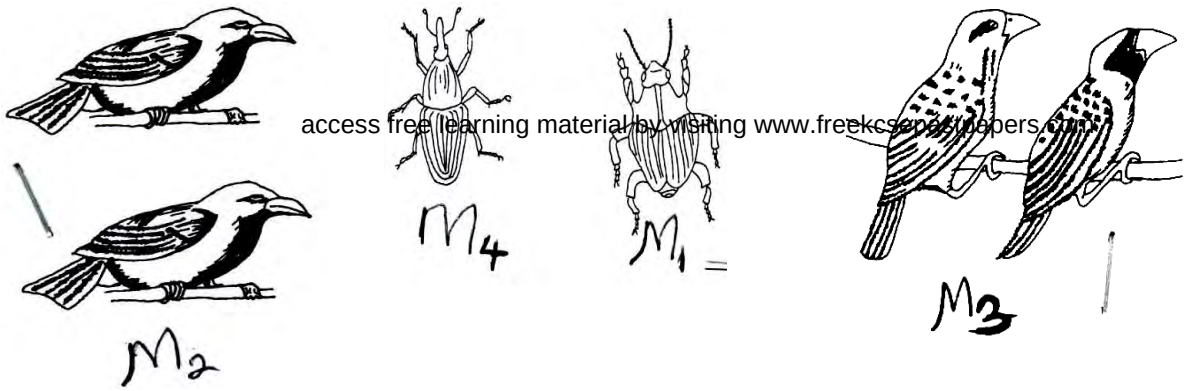
a) Identify the methods of crop propagation illustrated above. (1½ mark)
b) Give **one** condition under which method (1) above is carried out. (½ mark)
c) State **two** disadvantages of using stem cuttings for planting. (2marks)

20. (a) 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.



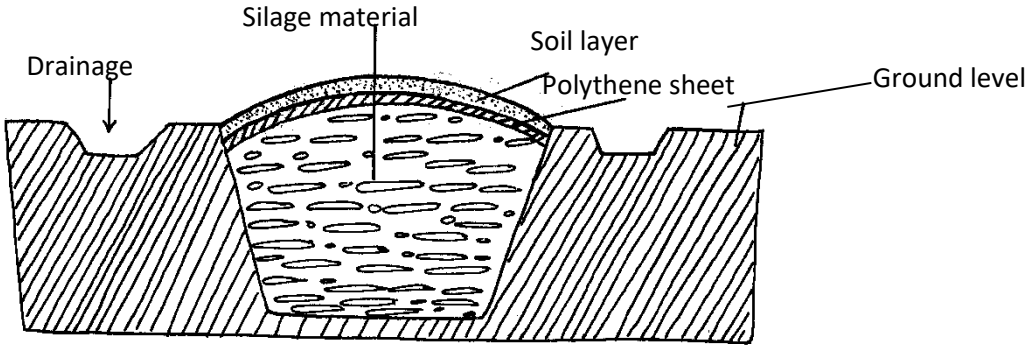
(i). Name the layers marked a,b,c and d. (2 mark)
(ii) What was the function of sodium carbonate in this experiment? (Imark)
(iii) What was the aim of this experiment? (lmark)

21.The diagrams below illustrate both field and storage pests



a) Identify the pests in the illustration. (4marks)
b) State **two** ways by which pest labelled M_2 causes loss in cereal crops. (1marks)
c) State **two** methods which are used to control the pest labeled M_2. (2marks)

22. Study the diagram on silage making shown below and answer the questions that follow.



a) Identify the silage preparation method shown above. (1mark)
b) Give **two** precautions taken when ensiling to ensure high quality silage. (2marks)
c) State **two** advantages of this method of forage conservation over other methods. (2marks)

SECTION C (40 marks)
Answer TWO questions from this section in the spaces provided

23. a) State and explain **five** agricultural services offered to farmers. (10marks)
    b) Give ways in which labour efficiency can be increased in the farm (5marks)
    c) State **five** the functions of co-operatives. (5marks)
24. a) Give one reason in each case why it is difficult to control the following weeds.
        i) Oxalis
        ii) Nut grass
        iii) Couch grass (3marks)
    b) State **two** main factors which contributes to competitive ability of weeds. (2marks)
    c) State **five** safety measures that a farmer must consider to prevent danger to other people and environment
    when using herbicides. (5marks)
    d) Describe any **five** cultural methods of controlling weeds. (10marks)

25. a) The table gives information on the supply of potatoes in a local market.

Price /bag in Kshs. 1000	Quantity Demanded (in bags)	Quantity supplied (in bags)
1	20	2
2	15	8
3	12	12
4	10	16
5	9	19

        i) using a suitable scale and on the same axis, draw and label supply and demand curves using the data given. (8marks)
        ii) From the curves drawn, what is the price per bag when 15 bags of potatoes were supplied? (1mark)
        iii) How many bags of potatoes were supplied at Equilibrium price. (1mark)
    b) Outline the harvesting of coffee under following subheadings

        i) Stage of harvesting (2marks)
        ii) Procedure of harvesting (5marks)
        iii) Precautions when harvesting (3marks)

LANG'ATA/KIBRA CLUSTER
AGRICULTURE
PAPER 2

SECTION A (30 MARKS)
Answer ALL Questions in the Spaces Provided

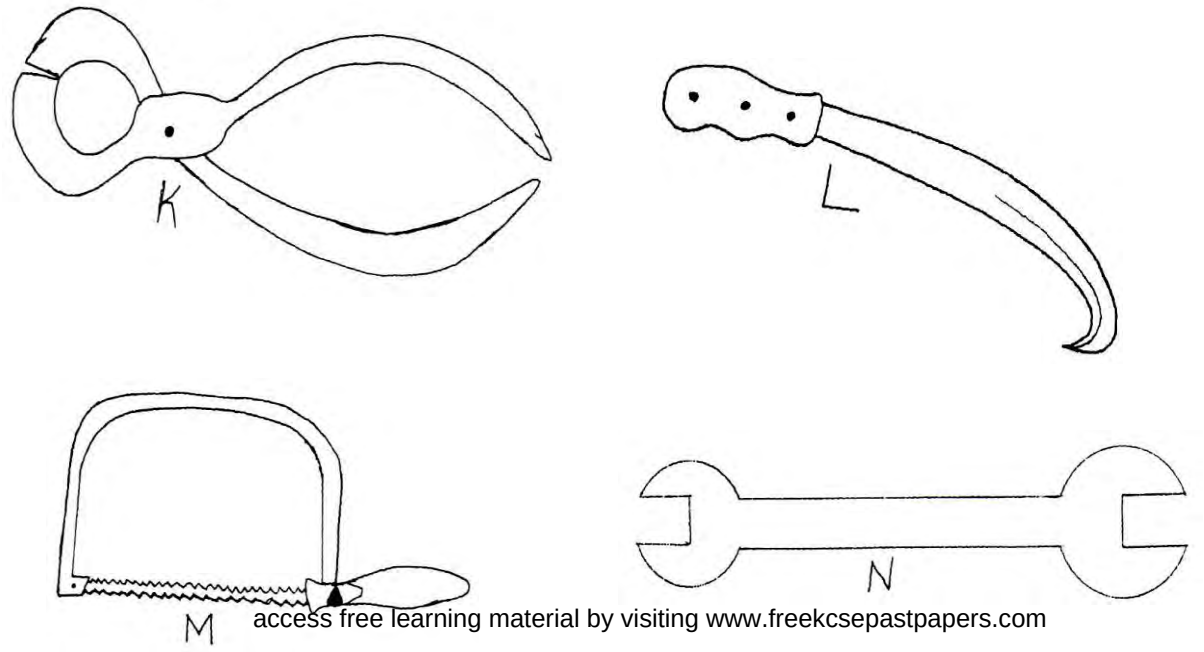
1. Why is Irish potatoes not recommended for feeding non-ruminant animals? (½mk)
2. Give **four** characteristics of succulent roughages. (2mks)
3. List **two** camel species reared in arid and semi-arid areas. (1mk)
4. Give **four** practices other than application of preservatives that can be carried out on wooden fencing posts to make them last long. (2mks)
5. Give **four** physical characteristics of a dairy cow. (2mks)
6. State **four** reasons for steaming up a dairy cow 2 months before calving down. (2mks)
7. State the causes of infertility in dairy cattle. (2mks)
8. State **two** circumstances which would lead a farmer to cull a high producing dairy cow. (1mk)
9. State the difference between crutching and raddling. (2mks)
10. Give **four** importance of keeping livestock healthy. (2mks)
11. How does isolation help in livestock disease control? (1mk)
12. What are the effects of parasites on livestock? (2mks)
13. State **four** methods of controlling liverflukes. (2mks)
14. Give **two** feeding rearing practices in livestock. (1mk)

15. State **three** properties of a good vaccine. (1½mk)
16. Give **two** symptoms of brucellosis in cows. (1mk)
17. State **three** ways of increasing ploughing depth when using a disc plough. (1½mks)
18. (a) Explain the term Epistasis as used in breeding. (½mks)
    (b) State **three** methods used in selection of livestock for breeding. (1½mks)
19. Give **three** factors that may inhibit milk let down in dairy cattle. (1½mks)

SECTION B (20 MARKS)

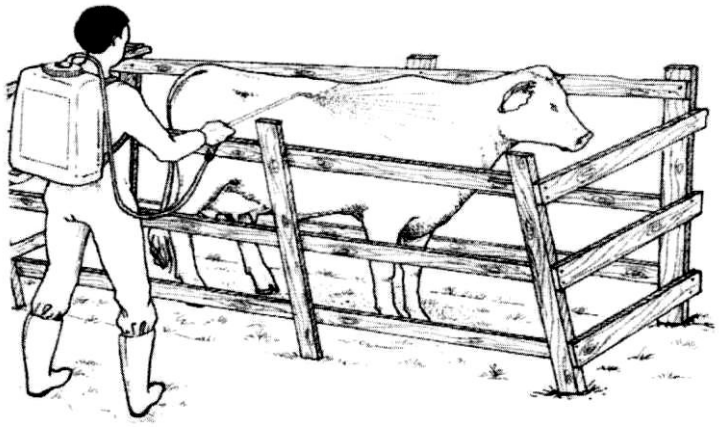
Answer all questions in the spaces provided in this section

20. Study the following tools carefully and answer the questions that follow.



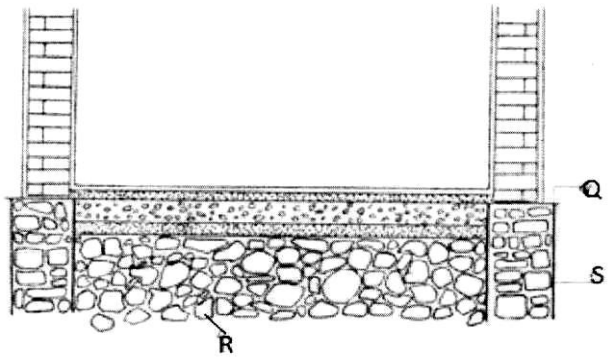
    (a) Identify the structures labeled K, L, M and N. (2mk)
    (b) State the use of tools labeled K and N. (2mks)
    (c) Give **two** maintenance practices of the tool labeled M. (2mks)
21. (a) Define the term feed conversion ratio as used in livestock production. (1mk)
    (b) A bull gained 100kg of live weight after eating 400kg of beef concentrates over a period of time. Calculate the feed conversion ratio. (2mks)

22. Below is an illustration of a livestock routine management practice. Study it and answer questions that follow.



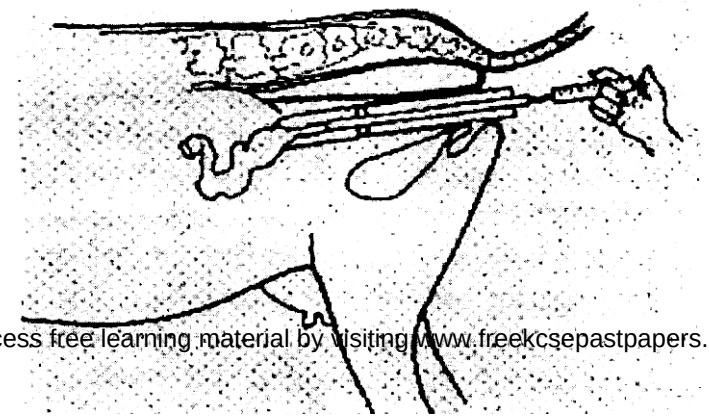
    (i) State the reason for carrying out the routine practice shown above. (1mk)
    (ii) Give **three** factors that affect the effectiveness of the chemical used above. (1½mks)

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



(i) Name the parts labeled Q, R and S. (1½mks)
(ii) Give the function of the part labeled Q. (½mk)
(iii) State **four** factors that determine the type of materials to use in construction of the wall. (2mks)

24. Below is an illustration of a practice carried out in livestock production. Study it carefully and answer the following questions:



i) Identify the practice illustrated above. (1mk).
ii) Study **four** advantages of the above practice. (2mks)
iii) State **three** limitations associated with the above practice. (1½mks)

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SECTION C (40 MARKS)

Answer any two questions from this section in the spaces provided

25. (a) Describe milk fever disease under the following sub-headings:
i) Animals affected. (1mk)
ii) Causal agent (1mk)
iii) Symptoms of attack (4mks)
iv) Control measures (4mks)

(b) Explain the factors to consider when selecting livestock for breeding. (10mks)

26. Describe the management of a day old layer chick up to the end of brooding. (20mks)

27. (a) Describe the components of a cooling system of a tractor. (10mks)
(b) Outline **five** care and maintenance practices of a tractor battery. (5mks)
(c) State **five** uses of solar energy. (5mks)

BUTULA SUB COUNTY JOINT EXAMS
443/1
AGRICULTURE PAPER I
DECEMBER 2021

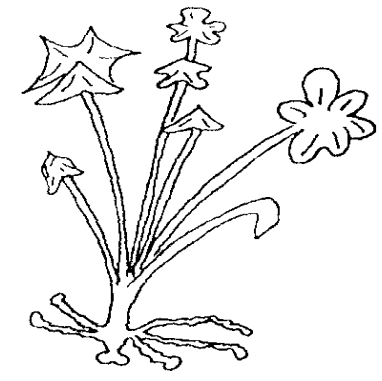
SECTION A (30 MARKS)
Answer all the questions in this section in the spaces provided.

1. State two benefits of optimum soil temperature in crop production (1mk)
2. State four reasons for deep ploughing during land preparation (2mks)
3. What is increasing return in crop production (2mks).
4. Name one physiological disease in tomatoes (½ mark)
5. Name FOUR farm records that should be kept by a poultry farmer (2mks).
6. List three forms in which soil water exists (1½mks)
7. State four sources of capital to a wheat farmer in Kenya (2mks)
8. Sate two ways of increasing light intensity in crops (1mk)
9. State three methods of preparing planting materials (1 ½ mks)
10. Name three methods of harvesting trees. (1½ mks)
11. Calculate the amount of K_20 contained in 400Kg of compound fertilizer 25:10:5 (2mks)
12. Give four importance of top dressing pastures (2mks).
13. Give THREE reasons for treating water on the farm. (1 ½ mks).
14. List three tertiary operations carried out in the farm (1 ½ mks)
15. Give THREE classifications of farm credit according to the repayment periods. (1½ mks).
16. Give TWO factors that determine the quality of hay. (1mk)
17. Give two reasons for training in crop production (1mk)
18. State two cultural measures taken by farmers to control weeds in the farm (1 mk).
19. Give one signs shown by crop when they are attacked by nematodes (½ mks)
20. Outline two circumstances when opportunity cost is ZERO (1 mk).
21. Outline three items that a maize farmer can enter into his consumable inventory records. (1 ½ mks)

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

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

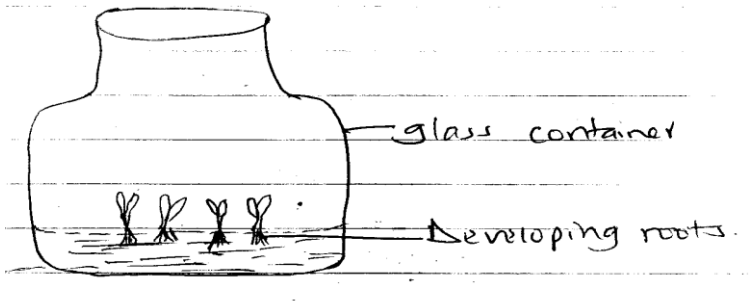
A



B

a) Identify the weeds A & B (2mks)
b) State one reason why the weed labeled A is difficult to control. (1mk)
c) State TWO economic importance of the weed labeled B in Agriculture. (2mks)

23. The diagram below illustrates materials and a method of vegetative propagation. Study it and answer the questions that follow.



a) Identify the method of crop propagation illustrated above. (1mk)
b) Give TWO Advantages associated with the method named (a) above, (2mks)
c) State TWO characteristics of certified seeds. (2mks)

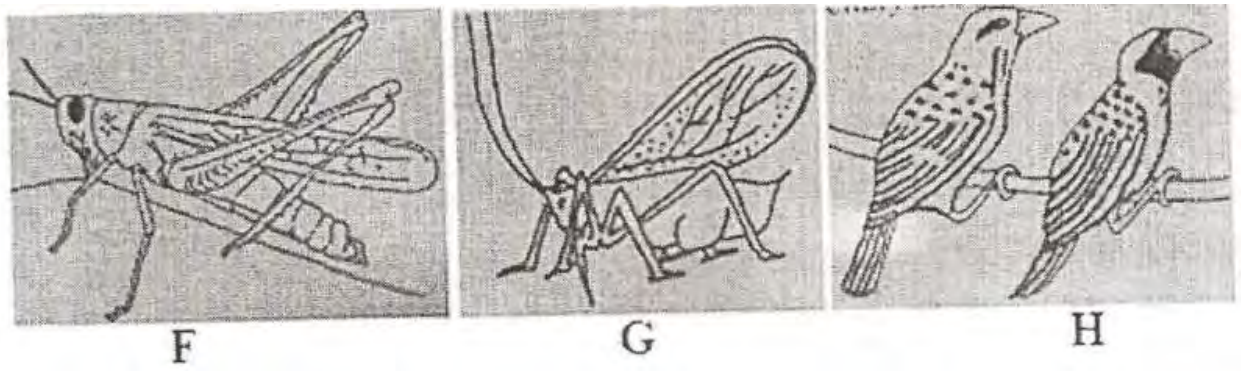
24. Shown below is a layout of a compost heap. Study it carefully and then answer the questions that follow.

4
3
2
1
MAIZE STALKS

Ground Level

a) Name the materials in each of the parts labeled 1, 2, 3 and 4 (2 marks)
b) State one role of each of the material in the parts labeled 1 and 3. (2 marks)
c) (i) Give one reason for adding water to a compost heap. (1mark)
(ii) Give one reason for regularly turning the materials in a compost heap... (1 mark)

25. Illustrated below are crop pests. Study the illustrated above.



a) Identify each of the pests labeled G, G, and H. (3mks)
b) State one damage caused by pest G to the crops infested (1 mark)

SECTION C (40 MARKS).

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

26. i. Outline FIVE (5) advantages of land consolidation (5mks).

ii. Explain eight factors that can encourage soil erosion (8mks)

iii. Outline 7 importance of drainage as a land reclamation practice (7mks)

27. a. Describe field production of dry beans under the following sub headings:

(i) Land preparation: (4mks)

(ii) Planting (6mks)

b. Explain 5 factors affecting rooting of cuttings in vegetative propagation (10mks)

28. (a) The tables below gives information on supply and demand schedules for tomatoes in a local market

Table 1 prices and quantities of tomatoes supplied

Tomatoes (kg)	price per kg (Ksh.)
150	16.00
130	14.20
125	13.80
112	13.00
106	12.70
85	11.80
50	10.60
42	10.40
30	10.20
25	10.10

Table 2: prices and quantities of tomatoes demanded

Tomatoes (kg)	Prices per Kg (Ksh)
80	18.00
87	16.70
101	15.50
119	14.10
135	13.20
155	12.40
171	11.80
185	11.30
191	11.10
205	10.80

i) Using the above data, plot supply and demand curves on the same axes. (8marks)

ii) Determine the price at which 120kg of tomatoes were supplied on the market. (1mark)

iii) How many kilograms of tomatoes were bought at a market price of Ksh. 13.00 (1mark)

iv) What was the equilibrium price for tomatoes on the market (1mark)

(b) Explain five advantages of mulching in crop production (5marks)

(c) Outline activities that may be undertaken in organic farming (4marks)

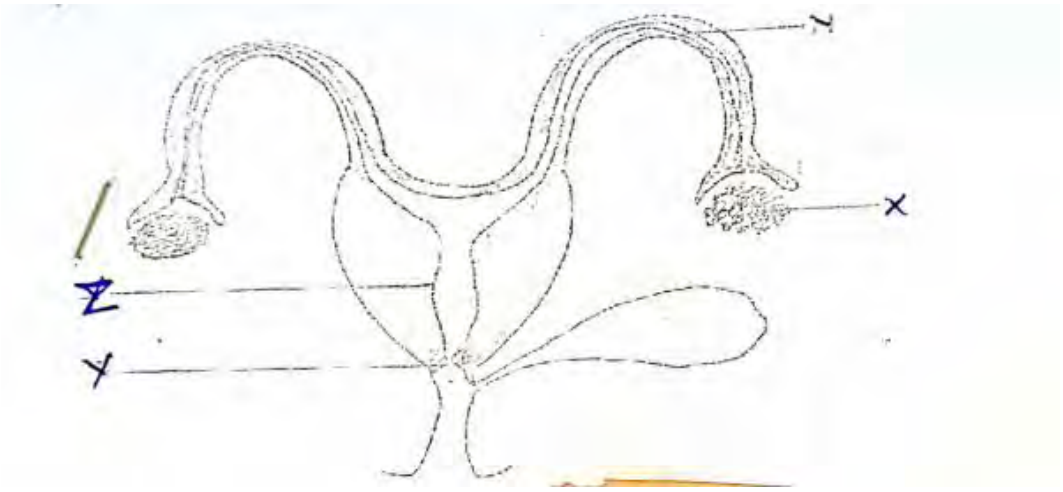
BUTULA SUB-COUNTY JOINT EXAM
AGRICULTURE 443/2
DECEMBER 2021

SECTION A (30 MARKS)

1. Give two reasons why jersey breed of cattle are better suited to arid areas than Friesian cattle (2mks)
2. Give two methods of handling rabbits (1mk)
3. Describe four factors to consider when selecting a breeding boar (2mks)
4. Name the other tool used together with the following (1mk)
   Canular……
   elastrator…….
5. State four characteristics of roughages in livestock nutrition (2mks)
6. Name four livestock structures used to control livestock parasites on the farm (2mks)
7. Name a breed of a pig which has the following characteristics (1mk)
   i) Black body with a white patch on the shoulders
   ii) Erect ears and a broad dished snout
8. Give two ways in which proper nutrition helps control livestock diseases (1mk)
9. List two methods that dairy farmers can use for outbreeding (1mk)
10. Give four maintenance practices which are carried out on a wheelbarrow (2mks)
11. State two characteristics that will be observed on chicks when the brooder temperatures are high (2mks)
12. List two causes of bloat in ruminant animals (1mk)
13. List two sources of animal power in the farm (1mk)
14. Give two reasons for washing the cow's udder with warm water before milking (2mks)
15. a) Differentiate between cropping and harvesting in fish farming (1mk)
    b) Give four reasons why bees swarm (2mks)
16. State four reasons why it is necessary to take weights of animals in the farm (2mks)
17. Name four systems of a tractor engine (2mks)
18. Give four characteristics of a good site for a fishpond (2mks)

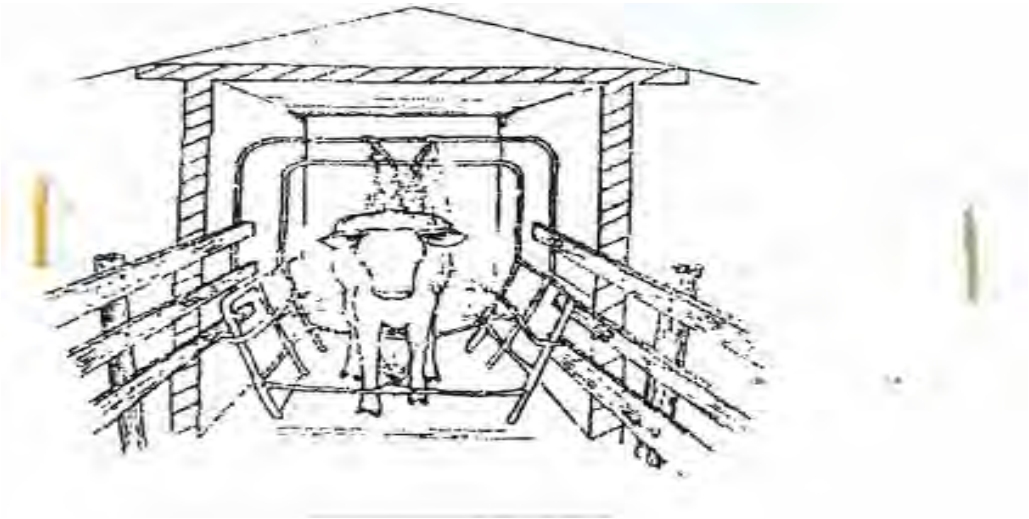
SECTION B (20 MARKS)

19. The diagram below shows a reproductive system of a cow, study it carefully and answer the questions that follow.



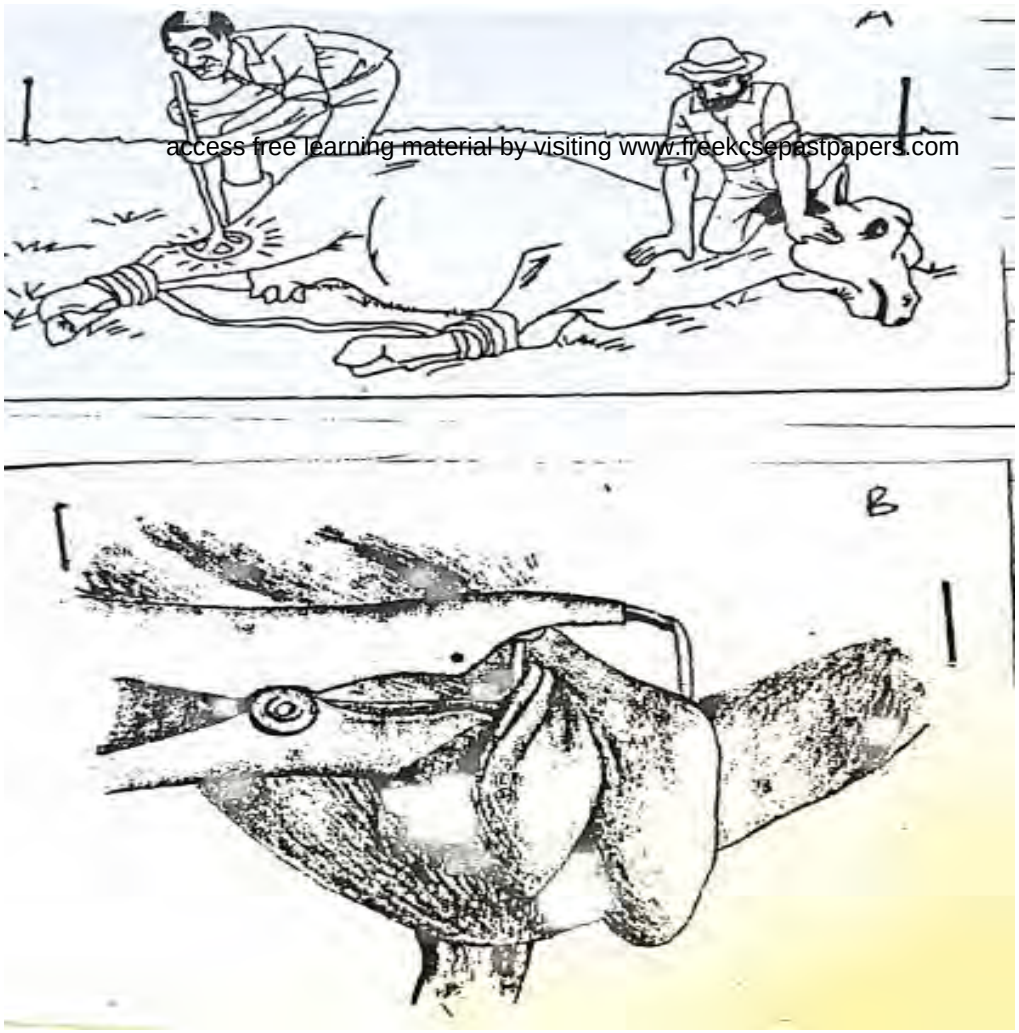
a) Name the parts labelled X and Y (2mks)
b) Give two functions of the part labelled Z (2mks)
c) Name any disease that can be transmitted to the above reproductive system through natural mating (1mk)

20. The diagram below shows a farm structure, use it to answer the questions that follow.



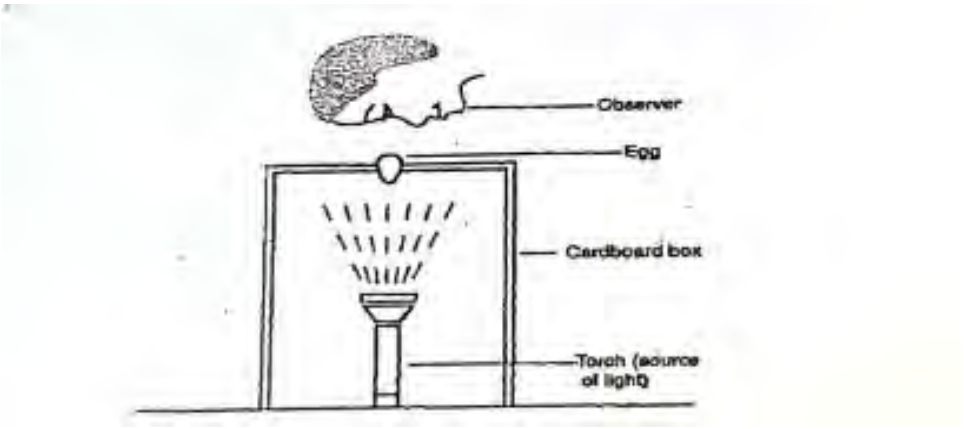
a) Identify the practice being carried out (1mk)
b) Name the structure in which the practice is being carried out (1mk)
c) Give three advantages of the above structure (3mks)

21. Study the diagrams below carefully and answer the questions that follow.



a) Identify the livestock management practice taking place in diagram A and B (2mks)
b) State two problems associated with practice A in the diagram above (2mks)
c) What is the importance of carrying out the management practice illustrated by diagram B? (1mk)

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



a) Identify the practice (1mk)
b) Why is the practice recommended on the 18th day of incubation? (1mk)
c) State three defects of an egg that can be detected using this set up (3mks)

SECTION C (40 MARKS)
Answer Any Two Questions from This Section

23. a) Describe the procedure of erecting wooden post for fencing (10 mks)
b) Describe the process of egg formation in the reproductive system of a hen (6 mks)
c) State four predisposing factors of mastitis in cattle (4 mks)

24. a) Describe seven advantages of artificial insemination (7 mks)
b) State five factors to be considered when formulating a livestock ration (5 mks)
c) Describe the effect of parasite on livestock (8 mks)

25. a) What preparation would a farmer carryout in preparation for arrival a day old chicks (8 mks)
b) Discuss pneumonia in calves under the following sub-heading (8 mks)
i. Symptoms
ii. Control
c) State four causes of long calving intervals (4 mks)

BUTULA SUB COUNTY JOINT EXAM, 2021
AGRICULTURE PAPER 1
MARKING SCHEME
SECTION A

1.
- Enhance seed germination
- Enhance plant growth
- Enhance soil microbial activities
- Improves quality of crops e.g. Tea, pineapple

2.
- Facilitates aeration
- Facilitates drainage
- Breaks hard pans/facilitates water infiltration
- Brings up previously leached nutrients
- Facilitates development of deep rooted crops –
- Exposes soil borne pests and diseases agents -
- Removes deeply rooted weeds.

3. This is the production in which each additional unit of input results to a larger increase in output than the proceeding unit of input

4. Blossom end rot

5.
- feeding record
- Production record
- Health records
- Marketing records
- Labour records

6. Hygroscopy
Superfluous
Capillary

7. Inheritance
Own savings
Gift/donation
Loan

8. Pruning
Wider spacing
Thinning

9.
- Breaking seed dormancy
- Seed inoculation
- Chitting
- Seed dressing

10. Pruning
Coppicing/tree felling/logging
Pollarding
Thinning
Lopping

11.
- $^{5}/_{100}$ **x 400kg = 20kg**
- A mark for formulae
- A mark for answer with units

12.
- To add (replenish) soil nutrients and ensure proper nutrient balance
- To improve the nutrients value of the crops.
- To correct or amend both physical and chemical properties eg soil structure.
- Enable soil micro-organisms to break down organic residues into available nutrients.

13.
- Kill disease causing organism
- Remove chemical impurities like excess flomides harmful to human beings
- Remove bad smell and bad taste.
- Remove solid/sediments in water

14.
- Ridging
- Rolling
- Levelling

15. Short term
    Medium
    Long terms

16. Stage of harvesting the forage crop
- Leaf:stem ratio
- Forage species used
- Length of the drying period
- Weather condition during drying
- Condition of the storage structure.

17. Clean fruit
    Provide support to weak stems
    Enhance light penetration

    Easen field operation
    Control soil borne pest and disease
    Prevent lodging of fruits

18.
- Early planting
- Mulching
- Deep ploughing
- Crop rotation
- Use of clean implements
- Use of cover crops
- Use of clean planting materials

19.
- Stunted growth
- Wilting
- Discoloration of foliage
- Gal formation/root knots

19.

- When there is no alternative or choice.
- When goods are limited in supply
- When the factors of production are freely offered

21.
- Fertilizers
- pesticides
- Herbicides
- Fungicides
- Seeds

SECTION B;

22 a) A – Oxais/oxalis latifolia/oxalis spp
B – Devils horse whip/Achyranthesaspera/Achyranthes spp
b) A – has underground storage structures that regenerate easily.
c) B – It is a weed in annual crops
It irritates farm workers reducing their efficiency

23. a) Tissue culture (1 mrk).
b) Mass production of propagules
used to establish pathogen free planting materials
Help in the control of viral diseases
Faster method than cultural methods.
Requires less space.
c) Free from weed seeds
Free from pests
Free from diseases
Have 100% germination potential

24. a) 1. Grass, leaves, refuse
2. Manure
3. Wood ash
4. Top soil
b) 1. Organic matter to form manure
3. Improve pH and nutrients in the compost manure
c) To regulate temperature
d) For even decomposition of manure

25. a) F – Locust
G – Aphids
H – Quelea
b) Pierce plant parts
introduce disease causing organisms

SECTION C

26. a) weed, pest and disease control is enhanced.
- Enables construction of permanent structures
- Soil conservation and land improvement
- Farm planning and adoption of crop rotation programme.
- Proper land supervision
- Gives the farmer legal ownership of land if already registered.
- Easy provision of extension services by the government. (5 x 1 = 5mks).

b)
- lack of ground cover exposes soil to agents of soil erosion
- Steep slopes increases the speed of surface ran off hence erositive powerSof work -
- Light/sand soils are easily carried away by agents of erosion.
- Shallow soils are easily Saturated with water and carried away
- High rainfall intensity leads to Saturation of soils hence increases in soil erosion/surface run off.
- Frequent cultivation/over cultivation pulverizes the soil making it easy to detach and carry away
- Over stocking leads to overgrazing this destroys ground cover exposing it to agents of erosion.
- Burning /Deforestation destroy vegetation cover and exposes soil to agent of erosion.
- Ploughing up and down the slope creates channels.
- Cultivation of river banks destroys riverine vegetation and destroys soil structure exposing it to agents of erosion.
- Cultivation the soil when too dry destroy soil structure making it easy to be eroded - Long slopes increases volume and speed of runoff hence increasing erosive power.

(Factor with explanation to score) (8x 1 = 8mks

c.
- improve soil structure
- -raises soil temperature
- Lowers the water table
- Improve soil aeration
- Improve microbial activities
- Increases soil volume
- Reduces soil erosion
- Removes toxic substances

27. a. **Land preparation**
- Prepare land during dry season; to kill all the weeds;
- Carry out secondary cultivation; to produce a medium tilth;

(ii) Planting:
- Plant at the beginning of the rains;
- Plants recommended varieties / suitable for the ecological conditions;
- Plants certified / healthy /well selected seeds;
- Plant at a spacing of 45 -60 cm by 15 – 23cm.
- Place 2-4 seeds per hole
- Plant as a depth of 2.5 – 5.0 cm;
- Apply phosphatic fertilizer; at a rate of 250kg /ha of SSP.

b. chemical treatment/hormones
- Oxygen supply
- Light intensity
- Temperature
- Relative humidity
- Leaf surface area (1x2 marks well explained)

28. (a) (i)
- Heading (H) = 1mk
- Smooth curves (SC) = 2X1 = 2mks)
- Curve identified (CI) = 2 x ½ = 1mk
- Curve plotting (CP) = 2x1 = 2mks
- Scale (S) = 2 x ½ = 1mk
- Labeling axes (A) = 2 x ½ = 1mk (8 mks)

(ii) Ksh. 13.40 ⁱ 10cts (13,30- 13.50)
(iii) 140 ⁱ 1kg (139 – 141 kg)
(iv) Ksh 13. 80 ⁱ 10cts (13.70 – 13. 90)

(b)
- Has an insulating effect thus modifies /regulates soil temperature
- Prevents water evaporation therefore moisture is retained in the soil for the plant to use - Controls soil erosion by intercepting rain drops before they hit the soil reducing the speed off surface runoff and increasing water infiltration
- Organic mulch decomposes into humus thereby improving soil structure/water holding capacity/water retention.
- After decomposition improves soil fertility by releasing nutrients
- After decomposition organic mulch it buffers soil PH/ increase cat ion exchange capacity

NB/ explanation must come out for score) (5x1 = 5mks)

(c) Mulching
- Application of organic manure/organic fertilizers
- Crop rotation
- Use of medicinal plant products to control diseases and parasites
- Rearing of livestock on natural feed staff/organic growth feedstuffs
- Physical/cultural/Biological pest/weed/parasite and disease control/accept specific control measure given