KCSE AGRICULTURE TOPICAL QUESTIONS

For marking schemes,call/whatsapp Mdm Mariam@0746711892



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- well summarised primary and secondary notes
- F1-F4 termly exams
- primary exams
- KCSE past papers
- KCPE past papers
- Mocks
- lesson plans
- schemes of work

Note:Exam questions are always free of charge

Marking scheme are not free

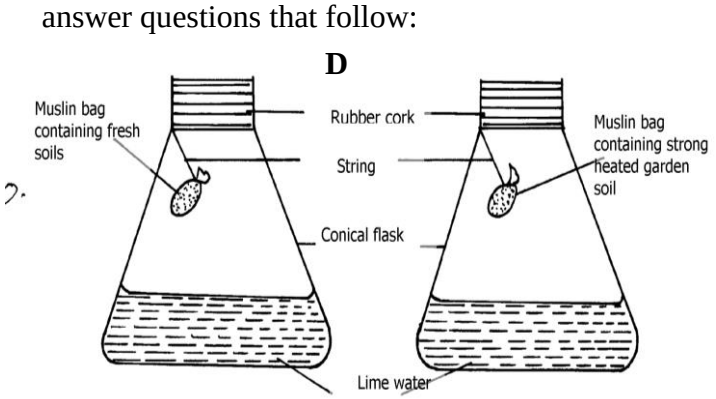
SECTION I : QUESTIONS

INTRODUCTION TO AGRICULTURE

1. Give **two** factors which characterize intensive farming
2. State **three** reasons why organic farming is encouraged in farming
3. State **two** ways in which agriculture contributes to industrial development
4. State **four** ways by which wind affects the growth of crops
5. State **one** physical characteristic used in classifying soil
6. Outline **four** advantages of organic farming
7. State **two** conditions under which shifting cultivation is practiced
8. Differentiate between the following terms as used in Agriculture:-
   (a) Oleculture and floriculture
   (b) Apiculture and aquaculture

FACTORS WHICH INFLUENCE AGRICULTURE

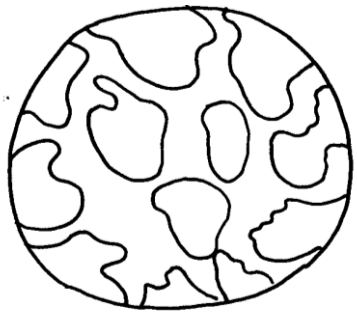
1. State **two** roles of humus in the soil that are beneficial to crops
2. a) outline **five** activities that may be undertaken in organic farming
3. List **four** effects of temperature on crop growth
4. State **four** ways by which wind affects the growth of crops
5. Name **two** factors related to light that affect crop production and distribution in Kenya
6. Describe the environmental conditions that may lead to low crop yields
7. List **three** environmental factors that affect crop distribution in Kenya
8. State **one** physical characteristic used in classifying soil
9. Outline **four** advantages of organic farming
10. The diagrams below show an experiment carried out by a form 1 class. Study them carefully and answer questions that follow:



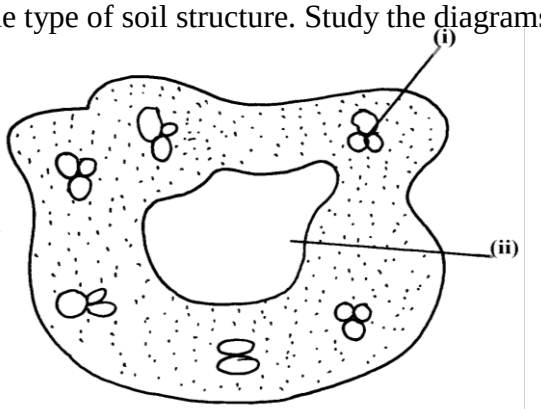
   (a) What was the aim of the experiment?
   (b) What was the observation that form 1 students made at the end of the experiment in flasks **D** and **E?**
   (c) Give the reason for the observation made in flask **D**

12. Briefly explain how sub-soil as a horizon in a soil profile can affect soil productivity
13. (a) What are the **three** aspects of light that are important to a farmer?
    (b) Mention **three** ways through which relative humidity affect crop production

14. The diagram labeled **E** and **F** below illustrates some type of soil structure. Study the diagrams carefully and answer the questions that follow:



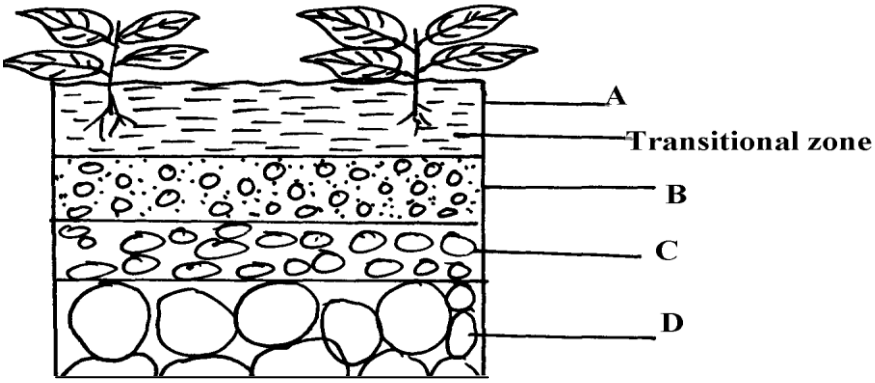
E



F

(a) Identify the types of soil structure illustrated in diagrams **E** and **F**
(b) Identify the parts labeled **(i)** and **(ii)** in diagram **F**
(c) Outline the influence of physical characteristics of soil on its properties

15. State **three** physical characteristics of soil
16. Study the diagram below and answer the questions that follow

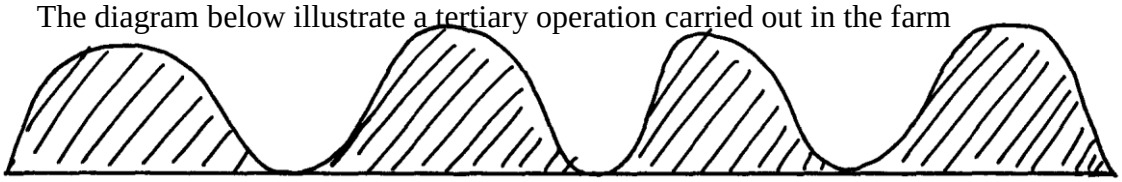


a) State merits of horizon **A**
b) State distinct features of horizon **B**
c) What does the term **transition zone** refer to in soil profile
i) Name horizon **C** and state its importance

17. Outline **two** ways temperature affects crop production
18. List **four** ways by which biological agents can enhance the process of soil formation
19. List **four** environmental factors that affect crop production in Kenya
20. Explain the role played by topography in soil formation
22. Mention **two** importance of parent's material in soil profile
23. Mention **four** ways of modifying soil temperature in crop production
24. a) Mention **two** factors that affect selectivity of herbicides
b) Name **two** farming practice that cause water pollution
25. Give **four** factors that influence soil formation
26. State **three** properties of soil that is influenced by soil texture
27. Name any t**hree** agents of biological weathering

CROP PRODUCTION I (LAND PREPARATION)

1. Give **three** factors that determine depth of ploughing during land preparation
2. List **four** reasons for cultivating land before planting
3. (a) What is minimum tillage?
   (b) Give four farming practices that help in achieving minimum tillage.
4. (a) Describe the establishment of grass pasture from the time the land is ploughed using a mould board plough to the time the pasture is ready for grazing
   (b) Explain **five** practices that a farmer should carry out to ensure uniform germination of seeds
   (c) Describe **five** factors that determine the number of cultivations when preparing a seedbed
5. State **four** physical conditions of the seedbed that need to be changed to facilitate germination
6. State **four** importance of sub soiling as a tertiary operation
7. Outline **four** advantages of rolling in seedbed preparation
8. State **four** disadvantages of minimum tillage
9. The diagram below illustrate a tertiary operation carried out in the farm

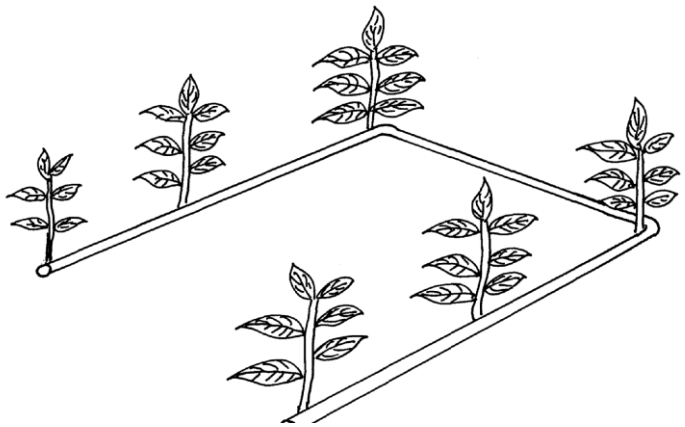


   a) Identify the tertiary operation
   b) (i) State the importance of the tertiary operation identified in **20(a)** above
   (ii) Give **two** other tertiary operations carried out in the field besides the one identified above
10. Give **two** reasons why it is advisable to cultivate the field during the dry season
11. How are hard pans caused by cultivation?
12. Give **four** factors that determine the number of secondary cultivation operations
13. Define the term minimum tillage
14. List four advantages of timely planting
15. State any **two** factors that determine the number of cultivation on a field before it is ready for planting
17. Give **three** benefits of timely planting of annual crops
18. State **four** factors determining the depth of ploughing land

WATER SUPPLY, IRRIGATION AND DRAINAGE

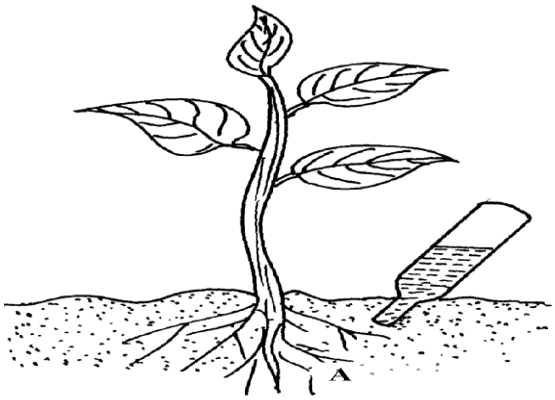
1. State **two** reasons for treating water for us on the farm
2. State **three** reasons for draining swampy land before growing crops

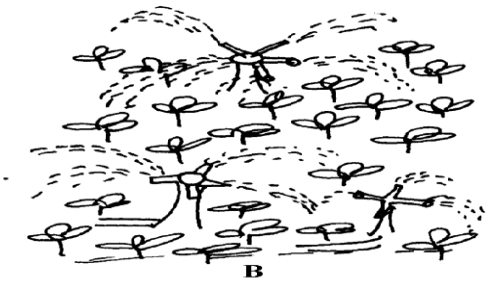
3. Use the diagram below of irrigation method to answer the questions that follow.



a) Identify the method of irrigation
   b) State **four** advantages of the above irrigation system
   c) State **three** factors that determine the type of irrigation on the farm
   d) State **two** disadvantages o f the above system of irrigation
4. a) What is **irrigation**
   b) Outline **three** methods of irrigation
5. a) List **four** use of water on the farm
   b) Give **four** methods of harvesting water on the farm
   c) Outline the stages involved in water treatment process
6. List any **four** uses of water in the farm
7. State **two** types of irrigation used in Kenya
8. Outline **four** disadvantages of cambered beds
   Describe the process of water treatment
9. Give **four** roles of drainage as a method of land reclamation
10. Name **two** types of water pumps which can be used in the farm
11. Name any **four** examples of working capital in maize production
12. List **four** types of water pumps which can be used in the farm
13. State **four** methods of drainage
14. Distinguish between **a dam** and **a weir**
15. How do the government control prices of essential farm produce
16. What is the difference between pumping and piping of water in the farm?
17. List four reasons of draining water logged soils before planting.
18. Give three Agricultural practices which lead to water pollution

19. The diagrams below illustrate some methods of irrigating crops in the field. Study the diagrams and answer the questions that follow:





(a) Identify the methods used ; (i) A (ii) B
(b) State **two** advantages of method **A** over method **B**
(c) What material should be inserted at point **T**
b) Name **two** farming practice that cause water pollution

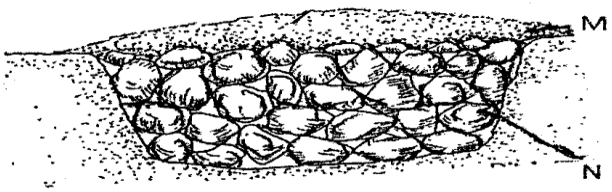
20. Give **four** reasons for practicing irrigation

22. a) State **four** importance of water to plants
b) State **four** reasons for treating water before use
c) Describe water treatment system in a chemical treatment plant

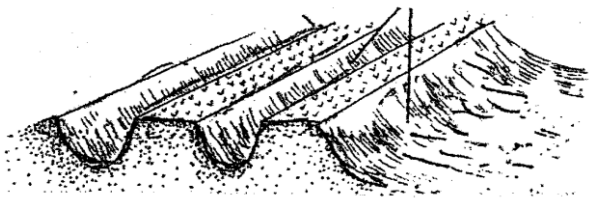
23. Name **four** diseases caused to man by drinking untreated water

24. State the functions of the following chemicals as used in water treatment;
(a) Chlorine.
(b) Aluminum sulphate (AIlum)

21. The diagrams labeled **S** and **T** illustrate some methods of draining waterlogged fields; use it to answer the questions that follow:



S

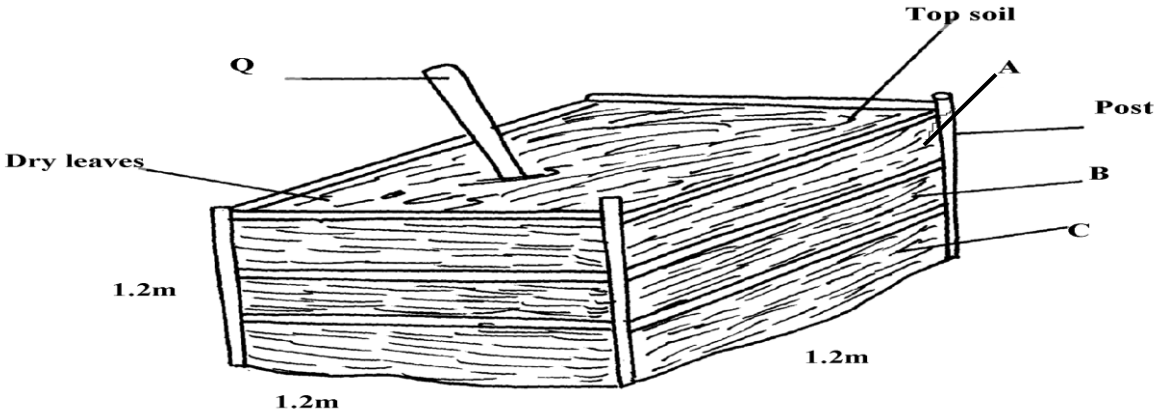


T

(a) Identify the methods illustrated
(b) What are the materials in **S** labeled **M** and **N**
(c) Name **two** types of crops that can be planted in the field instead of carrying out the practice illustrated in **S** and **T**
(d) What is the importance of carrying out land reclamation?

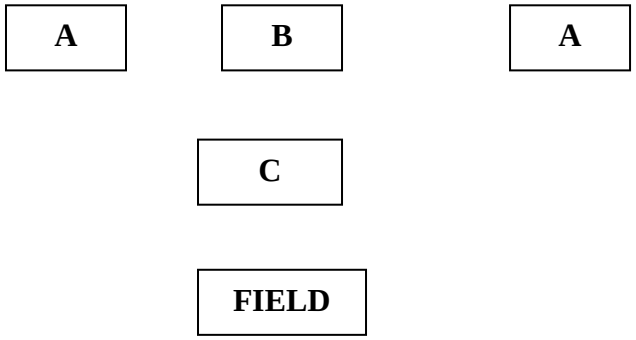
SOIL FERTILITY 1 (ORGANIC MANURE)

1. State **two** roles of humus in the soil that are beneficial to crops
2. List **four** characteristic of fertile soil
3. The diagram below illustrates a compost heap. Study it and answer the questions that follow



a) Name the part labeled **Q** and state its function
b) What is the function of each of the following components in preparation of compost manure
   i) Top soil
   ii) Wood ash
   iii) Rotten manure

4. The illustration below shows a four heap system of making compost manure. Study it and answer the questions that follow.



(a) By use of arrows indicate on the diagram above how the following material should be transferred from one heap to another till the manure is applied in the field
(b) How long does the material take to be ready for application in the field as manure?
(c) Give a reason for turning the material in the heap regularly
(d) Give **two** reasons why it is necessary to sprinkle water on the heap

5. Name **four** indicators of well-decomposed manure
6. (a) State **two** factors that should be considered when siting a compost manure heap
   (b) When preparing compost manure, explain the importance of each of the following:-
   (i) Addition of ash
   (ii) Regular turning of the compost manure
7. What is **leaching**?
8. State **four** advantages of adding organic matter to a sandy soil
9. (a) Describe the preparation of the following farm materials:-
   (i) Farm yard manure
   (ii) Hay
   (b) Explain the factors considered in timely planting of annual crops
10. A ration containing 18% protein is to be made from maize and sunflower cake. Given

that maize contains 7% protein, and sunflower seed cake 34% protein. Use Pearson square method to calculate the value of feedstuffs to be used to prepare 100kgs of the feed

ii) A part from Pearson square method, name **two** other methods that can be used to formulate feed ration

AGRICULTURE ECONOMICS

1. (a) What are the uses of farm records to a farmer?

2. Identify the farm record below and the questions that follow:

Date	**Disease symptoms**	**Animals affected**	**Drug used**	**Cost of treatment**	**Remarks**

(a)Identity of the record

(b) State **two** different information that should be entered in the remarks column

(c) Give **two** importance of keeping the farm record illustrated above

3. State **four** uses of farm records
4. State **four** uses of farm records
5. Outline **two** ways the level of education and technology influence the efficiency of agricultural production
6. Study the illustration below of farm records:- Use it to answer the questions that follow:

Enterprise

Month

Name of cow	**DAYS IN MONTH**											
	1		2		3		4		5		6	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM

(a) Name the type of the farm record illustrated above

(b) Give **three** reasons for keeping health records in a livestock production

(c) Give **three** pieces of information a dairy farm manager should collect for planning purposes

7. List down four pieces of information recorded in a field operation record.
8. List **two** events occur during induction stroke in a four stroke engine
9. Give **two** conditions under which a farmer may prefer the use of donkey trailed cart instead of a tractor drawn trailer in his farm

SOIL FERTILITY II (IN ORGANIC FERTILIZERS)

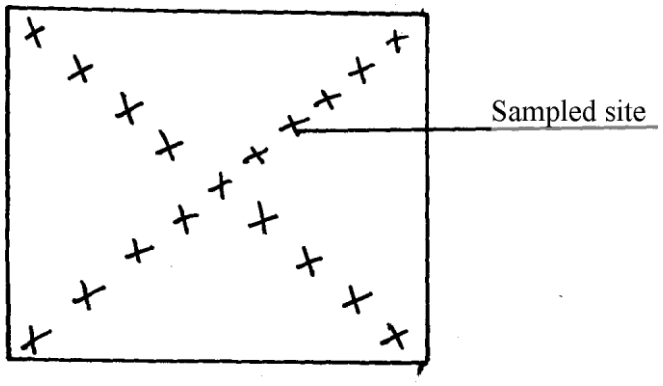
1. State **four** advantages of applying lime in clay soil
2. a) Give the form in which the following elements are absorbed by crops
   i) Sulphur
   ii) Nitrogen
   iii) Carbon
   iv) Magnesium

   b) List **three** effects of nitrogen to plants
3. Mr. Malombe of Shinyalu village prepared to top dress 10 hectares of nappier grass using sulphate of ammonia (21%N). Sulphate of ammonia is applied at rate of 150kg per hectare. Calculate

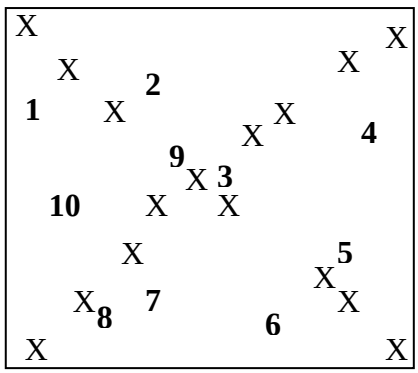
   a) The quantity of sulphate ammonia fertilizer the farmer will need for 10 hectares

   b) The number of 50kg bags of fertilizer he will purchase
4. Give **two** disadvantages of using farmyard manure

5. State **four** factors which influence the stage at which the crops are harvested
6. A form **four** student was given a sample of a fertilizer with the following characteristics:
   (i) Grey in colour
   (ii) It is granular
   (iii) Causes no corrosion
   (iv) It is highly hygroscopic
   (v) It is neutral
   (a) Identify the fertilizer
   (b) At what stage of growth of maize should it be applied?
   (c) Calculate the amount of K_2O contained in 400kg of a compound fertilizer 25:10:5
7. State **two** ~~pie~~ces of information that soil sample should have before being taken to the laboratory for testing
8. A compound fertilizer bag has the labels 20-20-0. What do the figures stand for?
9. Give **four** functions of sulphur in crops
10. State **four** advantages of lining as a measure of soil improvement
11. State **two** methods of increasing soil PH
12. (a) State **three** factors that determine the amount of inorganic fertilizers needed to be applied to crops
    (b) What are the necessary precautions observed when carrying out soil sampling?
13. List **three** functions of nitrogen in crops
14. (a) Distinguish between fertilizer grade and fertilizer ratio
    (b) List **four** elements whose deficiency results into chlorosis in plants
15. The diagram below shows a method of soil sampling



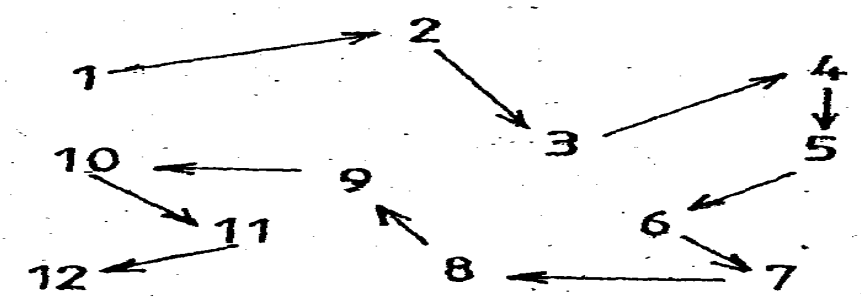
    (a) Name the method illustrated in the diagram
    (b) State **three** precautions taken when collecting the soil for testing using the above method
    (c) Give **four** reasons why soil from the farm is tested
16. A farmer was advised to apply compound fertilizer 20-20-10 on an orchard measuring 20m X 10m at the rate of 80kg/ha. Calculate the amount of fertilizer the farmer would require for the orchard. (Show your working)
17. a) A compound of fertilizer has a fertilizer grade of 25:10:5.calculate the a mount of phosphorus fore sent in 400kg of this fertilizer
    b) The diagram below illustrate methods of collecting soil sample from a field



i) Identify the methods illustrated 1-
ii) xx
iii) State **three** importance of carrying out soil sampling and testing

18. (a) What is an incomplete compound fertilizer?
(b) State **four** reasons why a maize crop continued showing deficiency of potassium despite applications recommended amount of potassic fertilizer

19. The diagram below shows a soil sampling method.



(a) Identify the method illustrated above
(b) Name any **two** spots in a farm that should be avoided during sampling
(c) Describe the steps followed while carrying out the exercise in **(a)** above

CROP PRODUCTION II (PLANTING)

This topic entails the following:

- Correct planting materials for various crops
- Selection and preparation of planting materials
- Determination of optimum time of planting
- Factors which determine planting depth
- Planting procedure for different crops
- Factors which determine seed rate, spacing and plant population.
- Calculation of plant population
- Economic value of land.

The following relevant questions and their answers in this topic will greatly help and motivate the user to comprehend and understand the required concepts and practices:

1. State **two** reasons for seed treatment of tree species before planting
2. Give **three** factors that determine spacing of beans
3. State **four** reasons for using certified seeds for planting
4. Below are diagrams showing vegetative material used for propagation.



a) Name the propagation materials A, B, C, D
b) What is the term used for inducing **B** to start germinating?
c) State **four** advantages of vegetative propagation on crop production

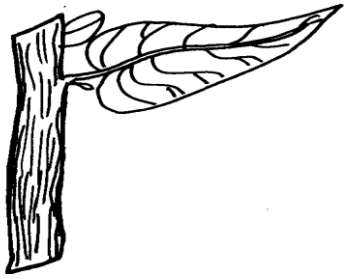
5. Differentiate between hybrid and composite
6. a) A farmer planted 100 maize seeds and 90 seeds germinated.
Calculate the germination percentage
b) Given that maize is planted at a spacing of 75cm by 25cm, calculate the plant population in a plot measuring 4m by 3m
7. Give **four** qualities of a mother plant which should be considered when selecting vegetative

material for propagation

8. Explain **five** practices that a farmer should carry out to ensure uniform germination of seeds
9. State **two** factors which determine the depth of planting
10. State **two** advantages of adding organic matter to sandy soil

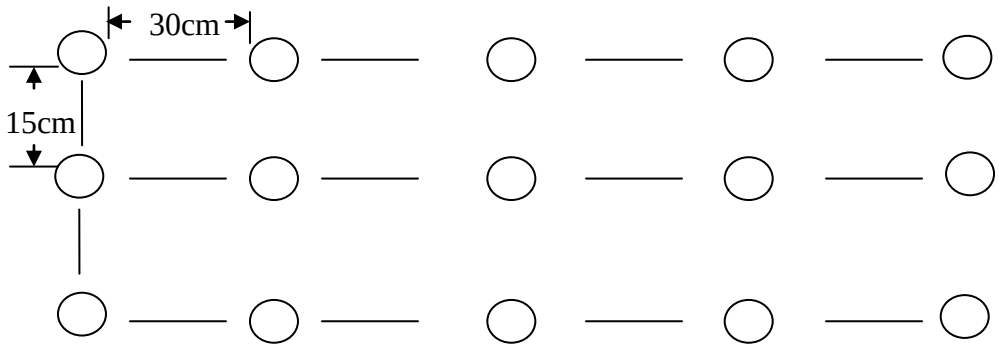
11. Calculate the number of tea plants in two hectares (2ha) given that the spacing is 150cm x 75cm and one seedling is planted per hole
12. Outline **four** reasons why training is important in some crops
13. Give **four** factors that influence the depth of planting
14. Two precautions taken when harvesting cotton
15. Outline **four** reasons why training is important in some crops
16. Give **four** factors that influence the depth of planting
17. Two precautions taken when harvesting cotton
18. State **four** factors that determine the spacing of annual crops
19. Outline **four** advantages of rolling in seedbed preparation
20. List **two** factors that effect rooting of cuttings in crop production
21. Outline **three** ways of preparing materials before sowing
22. Outline **three** ways of preparing materials before sowing
23. Distinguish between over sowing and under sowing

24. Study the illustration below of a tea vegetative material and answer the questions that follow



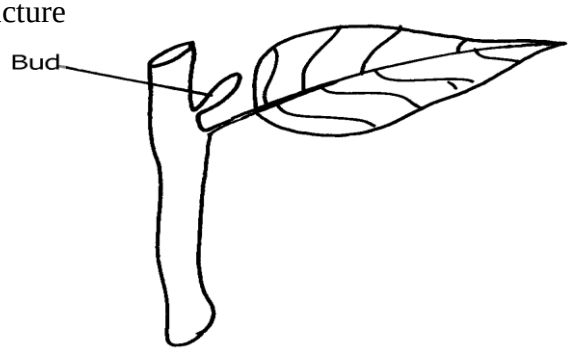
a) What name is given to the vegetative material drawn above for tea propagation
b) State **two** devisable characteristics of the selected plants used to develop the plant shown
c) Give **two** precautions observed during the preparation of the material above before planting

25. The diagram below illustrates the spacing which is used when planting beans. Study the diagram and answer the questions that follow:



a) State the spacing illustrated above
b) Suppose the student is asked to use the illustrated spacing to plant in a plot 4m by 3m leaving 30cm distance from the edge; calculate;
i) The number of rows on the wider side of the plot
ii) Calculate the plant population

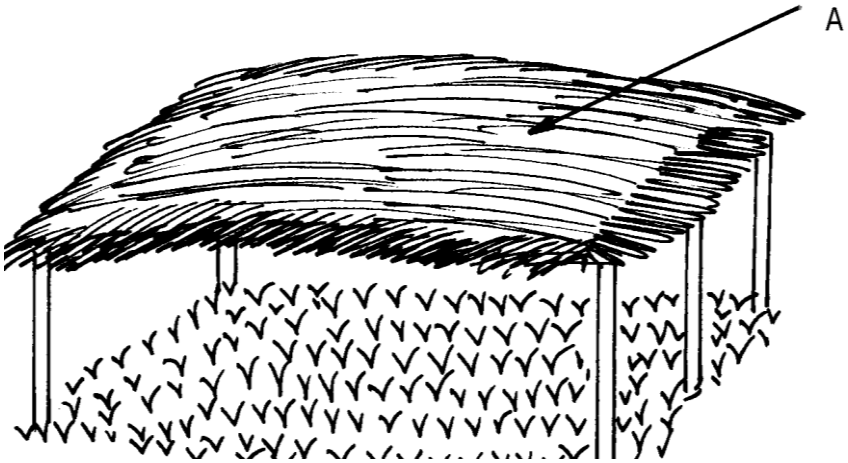
26. Using planting material whose diagram is shown below, list **four** factors that would influence the rooting of the structure



27. Describe the selection, preparation and raising of vegetative tea seedlings in the nursery
28. Explain the factors considered in timely planting of annual crops
29. Give four disadvantages of broadcasting as a method of planting.
30. Define the following terminologies as used in Agriculture
31. Give two advantages of producing crops by use of seeds over vegetative propaganda
32. State **four** ways of preparing planting materials before planting

CROP PRODUCTION III
NURSERY MANAGEMENT PRACTICES

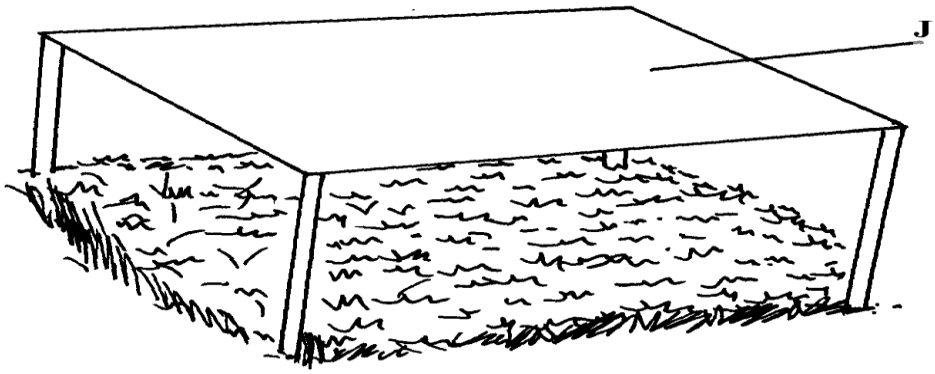
1. Name **three** methods of grafting that are used in propagation of plants
2. State **two** practices done during hardening-off of seedlings in a nursery bed.
3. List **two** methods of budding used in crop propagation
4. List **four** management practices carried out on a nursery bed
5. Outline **two** importance of tissue culture in crop propagation
6. Differentiate between a nursery bed and a seedling bed
7. Give **four** advantages of under sowing in pasture production
8. Give **four** advantages of under sowing in pasture production
9. The diagram below shows a structure used in crop production:



(a) Identify the structure above
(b) Give a reason for carrying out each of the following practices in the structure shown above
(i) Pricking out

(ii) Hardening off
(c) State three importance of the part labeled A in the above structure

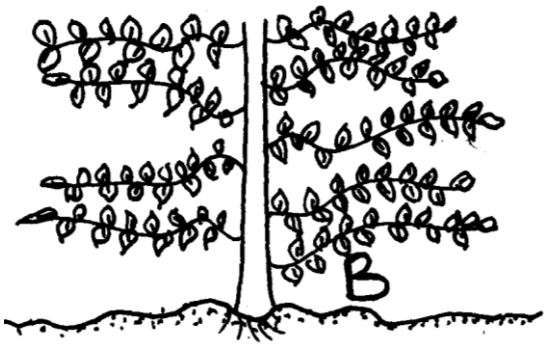
10. (a) Describe the siting and establishment of a crop nursery
(b) Explain management practices in a crop nursery
11. State **four** importance of thinning seedlings in the nursery bed
12. State the difference between a seedling bed and a seedbed.
13. Below is a diagram of a nursery for raising the seedlings

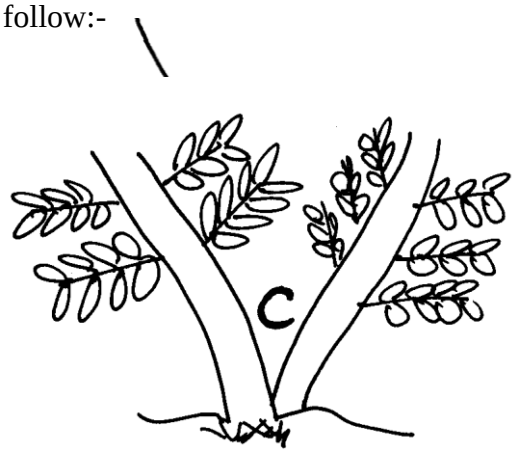


(a) State **two** advantages of having the part labeled **J**
(b) State any **three** management practices that should be carried out on the nursery from the time seedlings emerge to the stage of transplanting

CROP PRODUCTION IV (FIELD MANAGEMENT PRACTICES)

1. Distinguish between **staking** and **propping** as a field management practice on crops
2. Explain five advantages of crop rotation
3. State **four** factors which influence the stage at which the crops are harvested
4. The diagrams labelled **B** and **C** below are illustrations of coffee plants established using two different formative pruning systems.
Examine the diagrams and answer the questions that follow:-

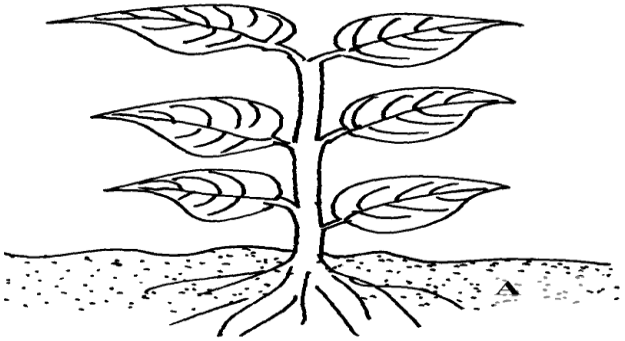


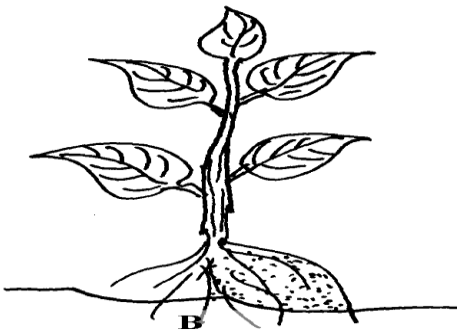


(a) Identify the system of pruning illustrated in **B**
(b) Identify the system of pruning in **C**
(c) Outline the procedure of how pruning in diagram **C** is carried out

5. Give **two** functions of earthing up in crop production
6. Describe the factors which determine the stage of harvesting of crops
7. Give **two** ways in which inorganic much helps to conserve water
8. State **four** factors that determine the spacing of annual crops
9. Explain the importance of each of the following practices: (i) Hardening off
(ii) Pricking out
(iii) Gapping
10. Outline **two** factors that determine the stage of harvesting crops
11. (a) List **four** factors that determine harvesting sage of a crop
(b) Give **four** practices that can be used to control storage pests

12. List **four** benefits of pruning in crop production
13. (a) What is winnowing?
    (b) Give **one** importance of the following practices: (i) Mulching
    (ii) Threshing
    (c) Which factors are considered when carrying out a crop rotation program?
14. What is frelishing?
15. Briefly explain how each of the factors listed below will determine the stage at which a crop is harvested
    (a) Intended use of the crop
    (b) Market demand
16. What is roguering in crop production?
17. What is meant by the term "changing the cycle" in coffee growing?
18. The diagram below shows a practice carried out on various crops on the farm. Study them carefully and answer the questions that follow;





    (a) Identify the farm practice represented by **B**
    (b) State the importance of the above practice in the following crops;
    (i) Maize
    (ii) Irish potatoes
    (c) At what stage of growth should the above practice be carried out in maize?
19. Mention **four** factors which determine the stage at which crops are harvested
20. State **two** limitation of using polythene sheets as mulching materials in a field of tomatoes
21. Give **two** management practices carried in a banana stool
23. State **two** functions of polythene sheet when used as mulch material
24. Give **four** crops requiring training

CROP PRODUCTION V (VEGETABLES)

This topic entails the following:

- Growing or production of a vegetable crop form nursery establishment to harvesting
- Keep records of crop production.
- Market vegetable crop produce
- Give reasons or importance of growing vegetable crops.
- The vegetable crops include the following: Tomatoes, cabbages, onions, carots, kales.

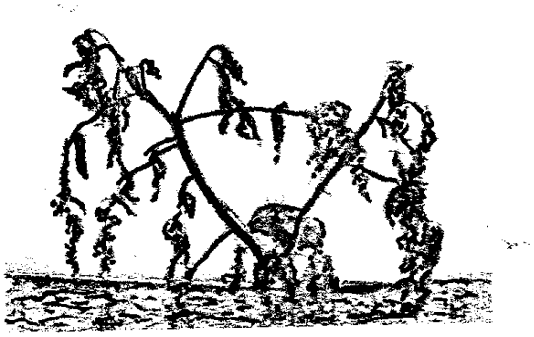
The following relevant questions and their answers in this topic will greatly motivate and help the user to comprehend and understand the required concepts and practices:

1. The diagram below is of a tomato plant. Study it and answer the questions that follow:-



a) State **three** management practices that have not been carried on the plant above
b) For each management practice state **one** reason why it should be carried out
c) Name **two** diseases that attack the crop above in the field

2. Describe the production of tomatoes (*lycopersicon esculentum*) under the following subheadings
a) Varieties
b) Nursery establishment
c) Field management practices
3. List **four** symptoms of late blight in tomatoes
4. State any **four** factors considered when grading tomatoes for fresh market
5. State **two** ways of controlling purple blotch in onions
6. The following is an illustration of an infected tomato plant. Study it carefully and answer the questions below:-



(a) Identify the disease which may have caused the condition shown in the illustration
(b) Name any other crop which may be affected by the disease identified in **(a)** above
(c) Mention **two** other factors which can lead to the same condition as shown by the illustration
(d) State **two** measures that can be sued to control the disease named in **(a)** above

7. Give t**wo** ways in which pruning helps to control diseases in tomatoes
8. Outline **four** ecological requirements for cabbages
9. a) Mention **two** pests which attack tomatoes
b) Give **two** causes blossom end rot disease in tomatoes
10. List three ecological requirements of tomatoes.

LIVESTOCK HEALTH
(INTRODUCTION TO LIVESTOCK HEALTH)

1. Identify **four** physical appearances to be observed in a sick animal
2. State **two** reasons why tsetse fly control is considered to be a land reclamation method
3. a) Explain **five** factors to consider when siting a fish pond
b) Explain the measures used to control livestock diseases
4. a) Name **four** notifiable diseases in livestock
b) Discuss **four** ways in which livestock disease are spread in the farm
c) Describe the methods of controlling livestock disease giving an example of different disease

in each case

AGRICULTURAL ECONOMICS II
(LAND TENURE AND LAND REFORM)

1. State **four** ways by which Re-afforestation help in land reclamation
2. State **three** objectives of land reforms that are taking place in Kenya
3. State **two** causes of land fragmentation in Kenya since independence
4. Outline the process followed in land adjudication
5. State **four** benefits of a farmer having land title deed
6. State **four** reasons for practicing land consolidation
7. Give **four** advantages of communal land tenure system
8. State **four** advantages of landlordism and tenancy
9. Outline **four** objects of land tenure reform
10. State **three** advantages of communal land tenure system
11. List down four important details in a land title deed.

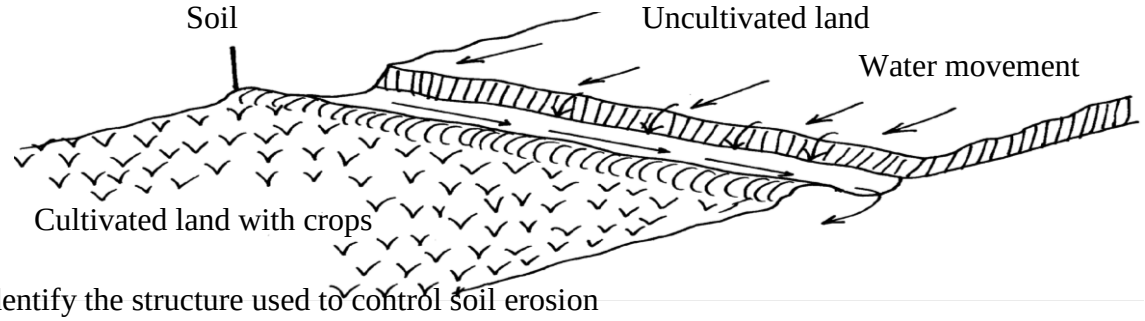
SOIL AND WATER CONSERVATION

This topic entails the following:

- Definition of soil erosion
- Explanation of various factors which influence erosion.
- Agents of erosion
- Description various methods of erosion
- Description of various methods of erosion control
- Description of micro-catchments and then uses.

The following relevant questions and their answers in this topic will greatly motivate and help the user to comprehend and understand the required concepts and practices:

1. Name **three** human activities that may influence soil erosion
2. Below is a diagram showing soil erosion control method



a) Identify the structure used to control soil erosion
b) What is the function of the structure made
c) Why was soil not put on the upper side of the trench made
d) State **four** effects if water was allowed into the cultivated land

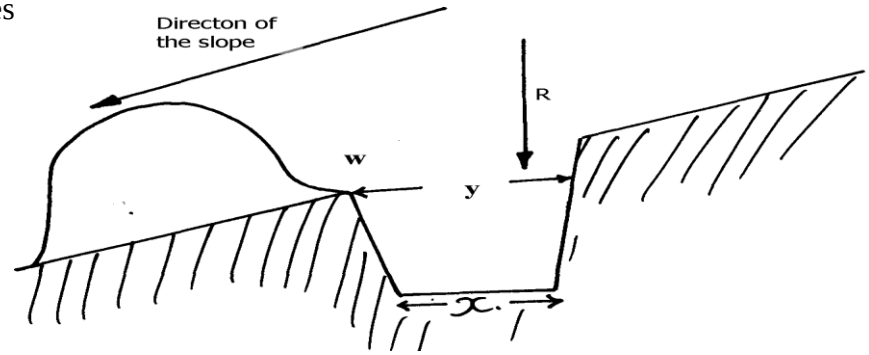
3. Give **two** roles played by Grassley in soil erosion control
4. List **three** materials that may be used for constructing a gabion
5. State **one** factor that would determine the width and depth of a cut off drain
6. Explain **five** ways by which grass helps to conserve soil
7. Give **four** farming practices that help in reducing the effects of water shortage in crop production
8. Name **two** types of terraces
9. Name **two** forms of gully erosion

9 -V- shaped
-U – shaped

10. Explain the cultural methods of soil erosion control

11. Mention **four** control measures of river bank erosion

13. The figure below represents a physical soil and water conservation measure used on various slopes



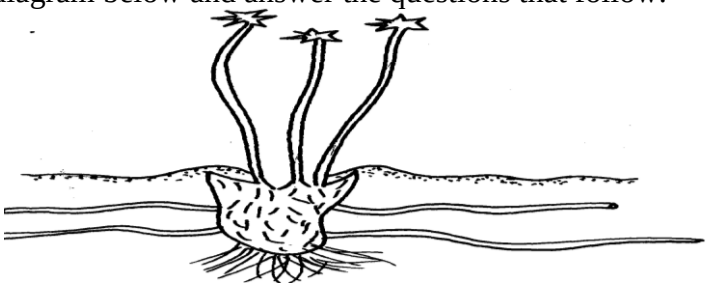
a) Identify the measure represented above
b) Describe the construction of the identified measure above

15. a) What is soil erosion
b) Give **four** types of water erosion
c) Explain factors which influence soil erosion
d) State any **seven** cultural ways of controlling weeds

16. Give **two** ways through which gabions control soil erosion

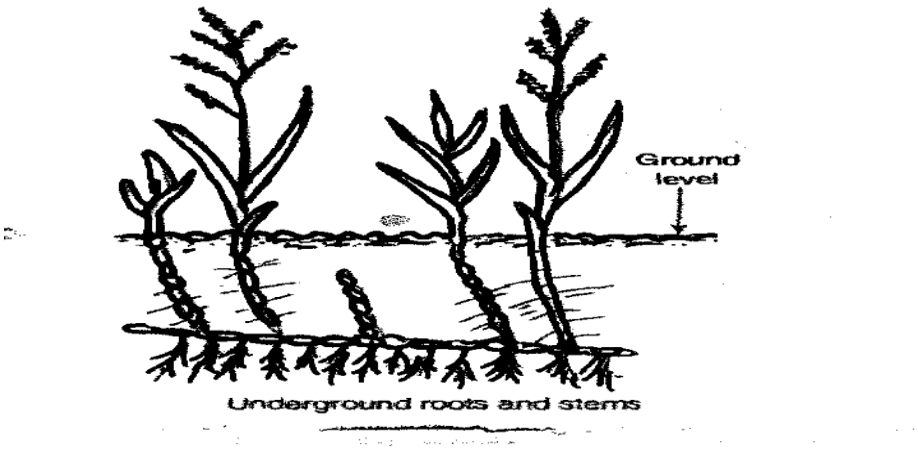
WEEDS AND WEED CONTROL

1. Study the diagram below and answer the questions that follow:



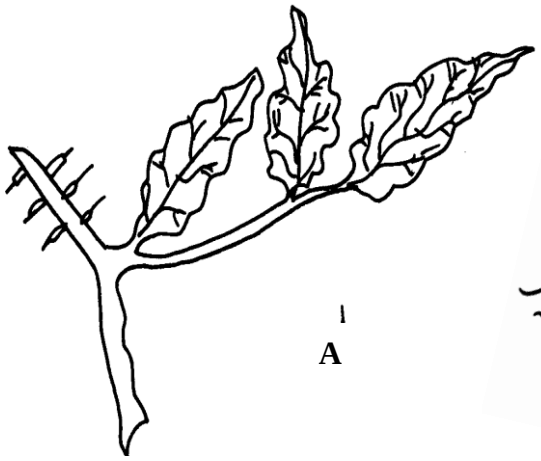
(a) Identify the weed
(b) Why is it difficult to control the weed?
(c) State the economic importance of the weed shown above

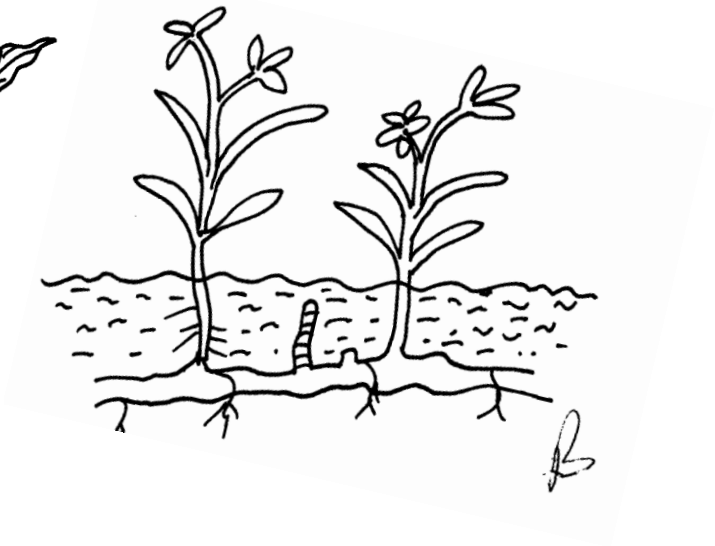
2. The following is an illustration of a common weed of arable land



(a) Identify the weed
(b) Why is it difficult to control the weed?
(c) State **one** harmful effect of the weed on crop production
(d) Give **two** measures used to control the weed

3. Below is a diagram of some common weeds. Study then and answer the questions that follow:-

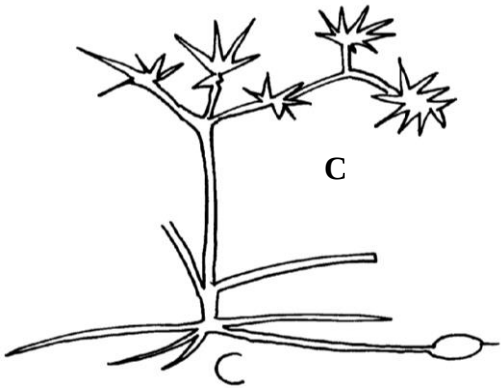


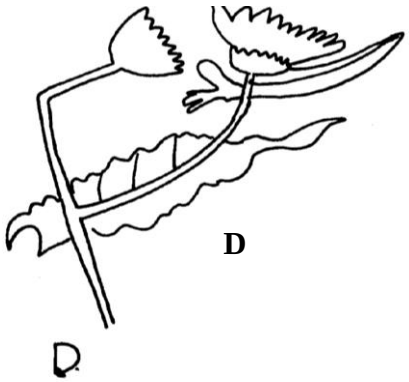


(i) Identify weed **A** and **B**
(ii) State **two** effects of weed **B** on crop production
(iii) Give a reason why weed **B** is difficult to control
(iv) State the effective method of controlling weed **B**

4. Give **four** methods of propagation which make weeds have a high competitive ability over crops

5. The diagrams below show weeds:-



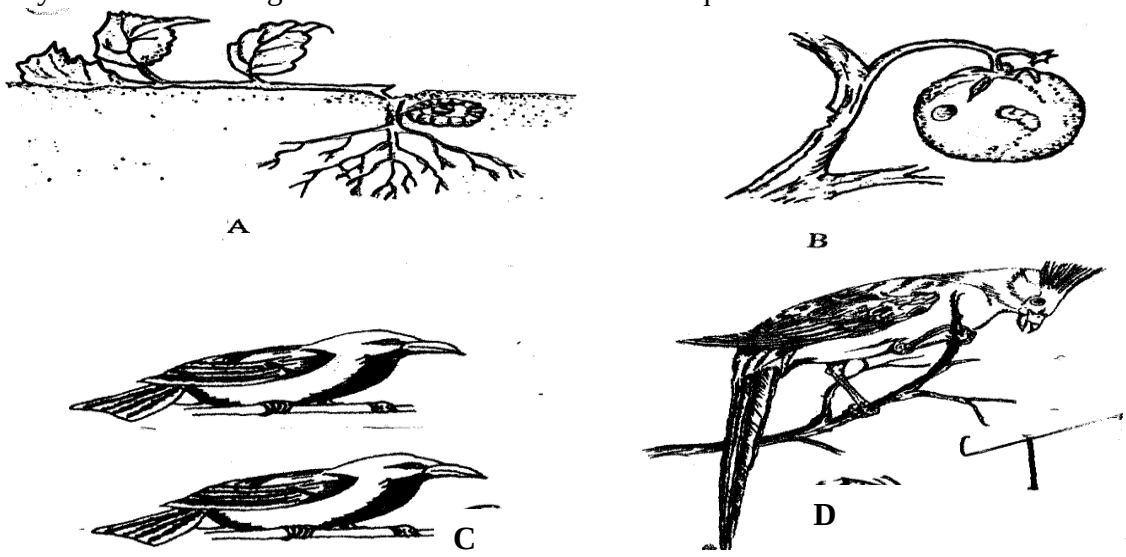


Identify the weeds **C** and **D**
(b) State why it is difficult to control weed **C**
(c) State **two** economic importance of weed **D**

6. (a) List any **four** types of weeds known to be poisonous to livestock
(b) At what stage of life cycle is best recommended to control weeds?
7. State **two** disadvantages of using herbicides
8. a) Name **four** herbicides that can be used to control weeds in a field of maize
b) At what stage of growth of maize should the weeds be controlled by use of a post emergence herbicides
9. (b) Give an account of economic importance of weeds
10. a) mention **two** factors that affect selectivity of herbicides
11. Listing specific examples of weeds describe their harmful effects in agricultural production

CROP PESTS AND DISEASES

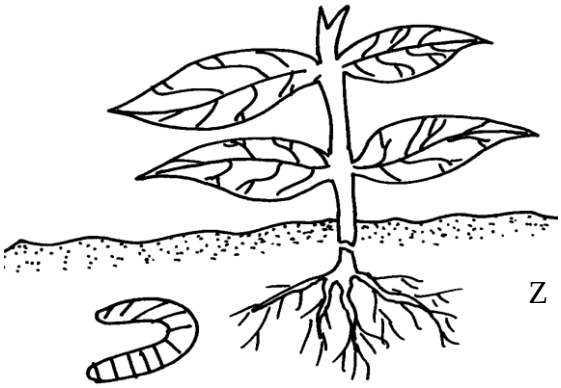
1. State **two** possible causes of swelling on the roots of legume crops
2. Discuss the various cultural methods of controlling pests in crops
3. What does the term 'close season' mean in crop production?
4. Explain **five** cultural methods of pest control in stored grains
5. Name **four** symptoms of viral infections in plants
6. Study the illustrations given below and then answer the questions that follow:-



(a) Identify the pests shown by the illustrations **B, C** and **D**
(b) State **one** effective method of controlling the pest labelled
(c) Name the type of crop commonly attacked by the pest labelled '**C**'

7. State the various practices carried out in the field to help control crop diseases
8. State t**wo** ways in which pesticides kill crop pests

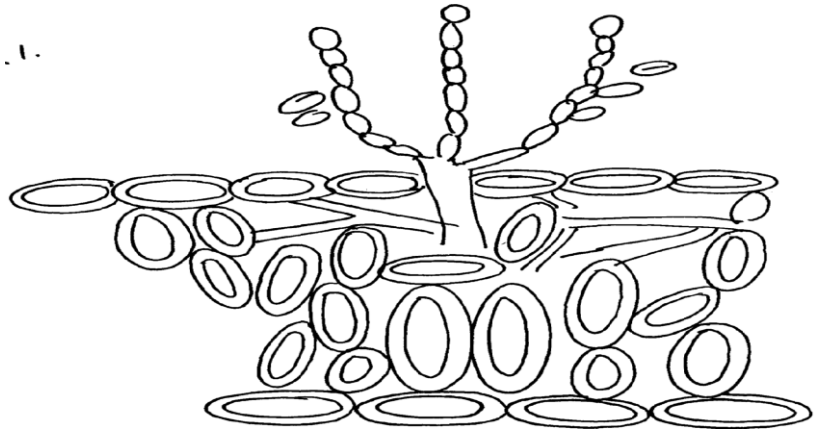
9. The diagram below shows kale seedling attacked by a pest



(a) Identify the pest
(b) What damage does the pest cause to the crop
(c) State **two** methods of controlling the pest

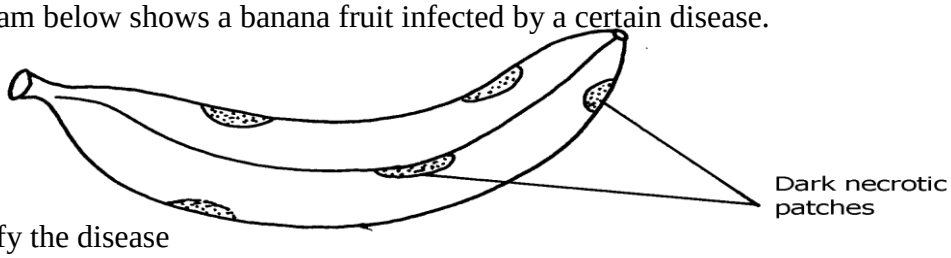
11. Define the term 'economic injury level of a pest and integrated pest control management
12. List **four** harmful effects of crop pests

13. The diagram below shows a fungal disease in a section of potato crop leaf



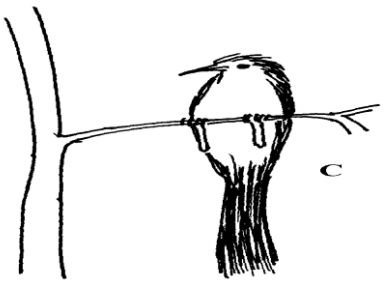
a) Identify the fungal disease
b) (i) State the causal organism of the disease identified above
ii) Give **two** symptoms of the above disease
c) Give **two** control measures of the disease

14. The diagram below shows a banana fruit infected by a certain disease.



(a) Identify the disease
(b) Suggest any **one** control measure for the disease you have named in **(a)**

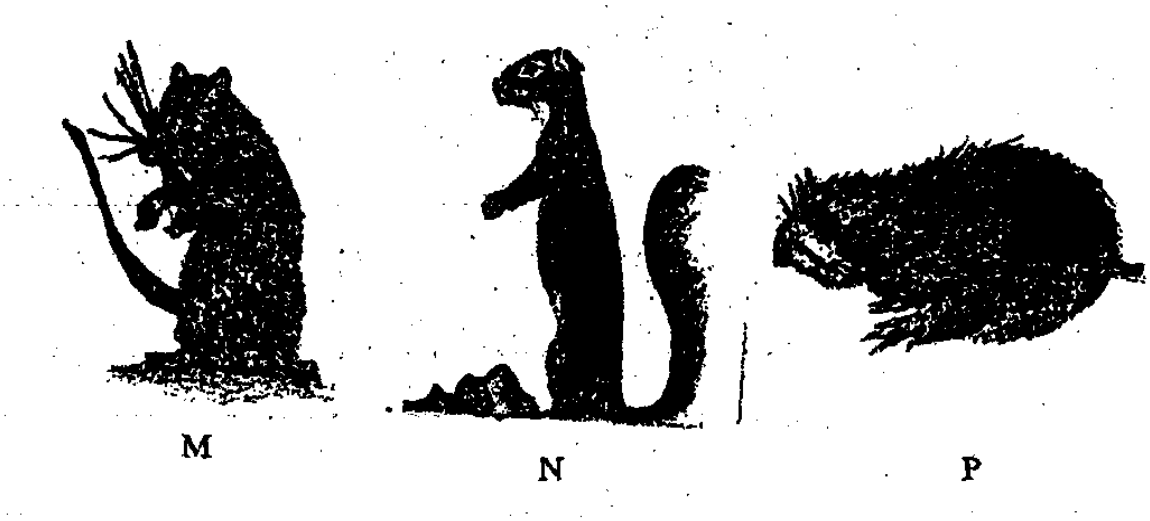
15. The diagram below shows a crop pest;



(a) Identify the crop pest
(b) State **two** damages the pest would cause to crops

16. Give two symptoms of nematode attack on bananas.
17. Give **four** cultural practices used in controlling crop pests
18. State **three** symptoms of coffee berry disease.

19 (i) Use the diagrams below to answer the question that follow.



(a) Identify the crop pests labeled **M**, **N** and **P**

(b) State **one** control measures of crop pests labeled **M**

(c) State the damage caused to crops by crop pest labeled **N**

20. State and explain the cultural methods of pest control

CROP PRODUCTION VI
FIELD PRACTICES FOR MAIZE, MILLET, SORGHUM, BEANS AND RICE: HARVESTING OF COTTON PYRETHRUM, SUGAR CANE COFFE AND TEA

:

1. List **four** management practices carried out in maize field at 45cm high
2. Why is it not recommended to use sisal bags in handling cotton
3. Describe the production of rice under the following sub-headings:-
   (a) Land preparation
   (b) Water control
   (c) Fertilizer application
   (d) Weed control
   (ii) Describe the environmental conditions that may lead to low crop yields
4. Describe the production of maize for dry grain production under the following sub-headings:-
   (a) Seedbed preparation
   (b) Planting
   (c) Weed control
   (d) Pest control
   (e) Disease control
   (f) Harvesting
5. Two precautions taken when harvesting cotton
6. Describe production of maize under the following sub-headings ;
   (a) Varieties
   (b) planting
   (c) pest and pest control
   (d) harvesting and storage
7. Describe the field production of maize under the following sub headings
   a) Ecological requirement
   b) Varieties
   c) Seedbed preparation

d) Pests and diseases
e) Harvesting

8. a) Discuss harvesting of cotton
   b) Explain the roles of Agricultural co-operatives in Kenya
9. Describe the production of maize under the following sub-headings:
   (a) Ecological requirements
   (b) Land preparation
   (c) Planting and field management
   (d) Pests and disease control
   (e) Harvesting and marketing
10. Give **two** precautions measures a farmer should put into consideration when harvesting cotton
11. Describe the production of beans under the following sub headings:
   (a) Ecological requirements
   (b) Seedbed preparation
   (c) Planting
   (d) Pest and pest control

FORAGE CROPS

1. State **three** factors which affects the quality of standing forage given to livestock
2. Explain Napier grass production under the following sub-headings
   i) Seedbed preparation
   ii) Planting
   iii) Fertilizer application
   iv) Weed control
   v) Utilization
3. Why is it necessary to allow freshly cut nappier grass to wilt before ensiling
4. Describe the establishment of grass pasture from the time the land is ploughed using a mould board plough to the time the pasture is ready for grazing
5. State **two** causes of failure in pasture establishment
6. State **two** advantages of grass-legume mixture
7. List **four** factors that determine the quality of hay
8. i) Discuss the production of Guatemala grass (Trypsacum Laxum) under the following headings
   a) Ecological required
   b) Land preparation
   c) Planting
   d) (i) Utilization and defoliation
   ii) Discuss **six** effects of late defoliation of fodder
9. Give **four** factors that determine the nutrient content in hay
10. (a) Describe the preparation of the following farm materials:-
   (i) Farm yard manure
   (ii) Hay
   (b) Explain the factors considered in timely planting of annual crops
11. (a) What is topping in pasture management
   (b)State two methods used in topping in pasture management
12. Give **two** advantages of grass-legume pasture over pure grass pasture
13. Why are farmers encouraged to conserve excess forage in the farm?
14. Give **two** factors affecting the quality of hay

AGRICULTURAL ECONOMICS III
(PRODUCTION ECONOMICS)

1. State **four** ways of increasing labour efficiency on the farm
2. The table shows egg production from individual birds with varying mounts of layers mash

100 layers (Fixed number)	Layers mash Kgs/week	Total egg production per week	Marginal production per week
100	0	140	0
100	10	155	15
100	20	180	25
100	30	240	60
100	40	340	100
100	50	470	130

(a) Sketch a graph representing the total egg production per week against amount of feed given
(b) Identify the type of production function represented by the graph in (a) above

3. (a) What are the uses of farm records to a farmer?
   (b) Explain **four** ways in which a farmer may improve Labour productivity in the farm
   (c) Outline the process followed in land adjudication
4. Name any **three** types of agricultural services available to the farmer
5. Outline **four** management guideline questions which assist a farm manager in making accurate farm decisions
6. Give **four** ways of improving labour productivity
7. List **four** variable inputs in sorghum production
8. List **four** agricultural support services available to a crop farmer in Kenya
9. Define the following as used in Agricultural economics:-
   (a) Gross domestic product (GDP)
   (b) Per capita income
10. Explain the various ways in which farmers may adjust to risks and uncertainties
11. (a) The table below represents the yield of maize in 90kg bags in response to application of different quantities of planting fertilizer
    (i) Fill in the blank spaces

Input 50kg bag fertilizer	Out put 90kg bag maize	Average product (AP)	Marginal product (MP)
0	6	-	-
1	10	-	-
2	24	-	-
3	31	-	-
4	36	-	-
5	40	-	-
6	43	-	-
7	43	-	-
8	40	-	-

(ii) Suggest the best level of production in relation to the inputs and output
(b) A farmer is considering undertaking the production of either maize or beans. Study the following information about the two crops then answer the questions that follow:

(i) Maize

Yield per hectare	5,500 kg
Price	15 per kg
Cost of cultivation / ha	Kshs. 3000
Amount of seeds/ha	25kgs
Cost of DAP fertilizer/bag	Kshs.1,500
Amount of DAP fertilizer/ha	3bags
Cost of seeds/kg	Kshs.100

Labour requirements/ha	50 man days
Cost of labour	Kshs.150 per man day
Amount of CAN fertilizer/bag	3 bags
Cost of CAN fertilizer/bag	Kshs.1000

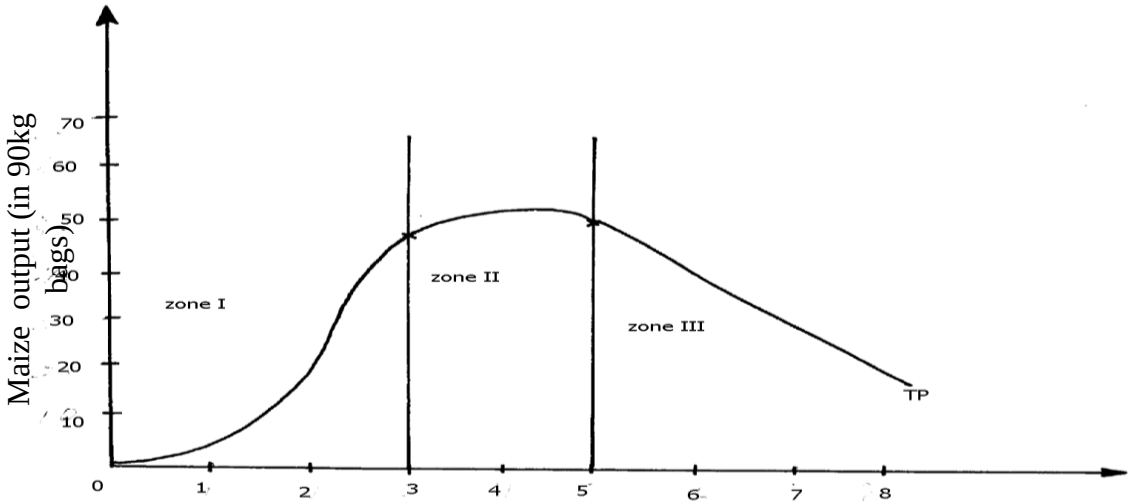
(ii) Beans

Yield per hectare	5000kg
Price	50per kg
Cost of cultivation / ha	KShs.3600
Labour requirements/ha	75 man days
Cost of labour	Kshs. 200 per man day
Cost of DAP fertilizer/bag	Kshs. 1500
Amount of DAP fertilizer/ha	2bags
Cost of seeds/kg	Kshs.800
Amount of seed/ha	20kg
Amount of CAN fertilizer/bag	1bag
Cost of CAN fertilizer/bag	Kshs.1,000
Cost of sprays	Kshs.3,000

(i) Calculate the gross margins for each crop (14mks)

(ii) From your calculation, which crop is profitable to grow?

12. Below is a graphical representation of the law of diminishing returns.



(a) Explain what happens in each of the three zones marked I and III in relation to the output of maize and the NPK fertilizer input

(b) Which of the three is a rational zone of production

13. Give **four** variable costs in maize production

14. A farmer has the following yield from a two hectare millet crop enterprise at Oluch irrigation schemes.

Study it and prepare his gross margin. is it profitable to grow millet? He spent the following in his operations

Weed	800/=
Seeds	20kg/ha
Irrigation	600/=/ha
Ploughing	500/=/ha
Clearing the land	1200/=
Cost of seeds	300/= /10kg bag
Planting	400/= /ha
Harvesting	1200/= /ha
Yield	32bags
DAP fertilizer	2 bags at 10 000/= /50kg bags

CAN fertilizer 2 bags at 700/= /50kg bags
Gunny bags 40/= /bag
Transport to market 2000/=

14. A farmer has the following yield from a two hectare millet crop enterprise at Oluch irrigation schemes. Study it and prepare his gross margin. is it profitable to grow millet? He spent the following in his operations

Weed 800/=
Seeds 20kg/ha
Irrigation 600/=/ha
Ploughing 500/=/ha
Clearing the land 1200/=
Cost of seeds 300/= /10kg bag
Planting 400/= /ha
Harvesting 1200/= /ha
Yield 32bags
DAP fertilizer 2 bags at 10 000/= /50kg bags
CAN fertilizer 2 bags at 700/= /50kg bags
Gunny bags 40/= /bag
Transport to market 2000/= (20mks)

15. What is profit maximization in Agricultural Economics

16. a) A farmer is considering undertaking the production of either maize or beans. Study the following information about the two crops and then answer the questions that follow:

Maize	
Yield per hectare	5500kg
Price	Kshs.15 per kg
Cost of cultivation/ ha	Kshs. 3000/=
Amount of DAP fertilizer/ bag	Kshs.1500/=
Amount of DAP fertilizer/ ha	3 bags
Cost of seed/ Kg	Kshs.100
Labour requirements / ha	50 man days
Cost of labour	Kshs.150 per man day
Amount of CAN fertilizer	3 bags
Cost of CAN fertilizer/ bag	Kshs.1000

Beans	
Yield per hectare	Kshs.5000
Price	Kshs.50 per kg
Cost of cultivation/ ha	Kshs.3600
Labour requirements/ ha	75 man- days
Cost of labour	Kshs.200 per man day
Cost of DAP fertilizer/ bag	Kshs.1500
Amount of DAP fertilizer/ ha	2 bags
Cost of seed/ kg	Kshs.80
Amount of seed/ ha	20kg
Amount of CAN fertilizer/	1 bag
Cost of CAN fertilizer/ bag	Kshs.1000
Cost of sprays	Kshs.3000

i) Calculate the gross margin for each crop
ii) From your calculation which crop is profitable to grow

b) Discuss **five** factors considered when planning a farm

17. Using the data provided in the table below, make an interpretation and advice the farmer on which

crop to grow ;

Type of crop	Gross margin (Ksh)
Cotton	18,400
Ground nuts	20,050

18. Outline **three** advantages of budgeting in farm business
19. A farmer has 1 Ha piece of land on which he grows maize. His farm record on maize production for nine years is as shown in the table below:

Year	Fertilizer applied (bags)	Total output of maize (bags)
1995	0	4
1996	2	10
1997	4	28
1998	6	42
1999	8	52
2000	10	60
2001	12	66
2002	14	66
2003	16	64

(a) i) Using an appropriate scale, with input on the X-axis draw a graph to show the relationship between inputs and total output

(ii) From the graph you have drawn, how many bags of maize would the farmer produce if he applied 9bags of fertilizer?

Calculate the farmers marginal products and average products for the years

(i) From the data given, what rate of fertilizer application would the farmer choose if he wanted to grow maize in 2004?

(ii) Give an explanation for your choice in (c) (i) above

(b) Assuming that the average price of fertilizer over the years recorded was shs. 1,200/= per bag and the price of maize was ksh.1000/= per bag :

Calculate the gross income for the years 2002 and 2003

Calculate the net income for the year 1999. (Assume no other costs were incurred)

20. Name five types of costs incurred in a farming business
22. List any four sources of credit to farmers.
23. List **three** ways in which labour peaks can be overcome in the farm (1½ mks)
24. State **four** ways of improving farm labour productivity
25. A farmer had a plot of land measuring 5 hectares in which be intended to plant maize. He was advised to apply 150 kg of P_20 per hectare at planting and 200kg N per hectare during top dressing. The fertilizer available in the market was Calcium Ammonium Nitrate containing 20% N and Di-ammonium phosphate 46% P_20_5. Calculate.

(a) (i) The amount of Di—ammonium phosphate required

(ii) The amount of calcium ammonium nitrate required

(b) Baraka farm manager plans to grow Irish potatoes or maize for grains. Study the information below and answer the questions that follow:

Irish potatoes

Cost of fertilizers/ha_____ Ksbs 10,000.
Labour requirements/ha _____ Kshs 50 man - days
Yield /ha _____ 10,000kg
Seed potato/ha _____Kshs20, 000
Cost of labour _____ Kshs 200 per man day
Cost of fungicides_____ Kshs 5000
Cost of ploughing_____ Kshs 4000
Selling price of potatoes per kg _____ Kshs 30.

Maize

Yield per hectare _____Kshs.7,500kg

Selling price of maize per kg _____Kshs 20.
Cost of ploughing /ha _____Kshs.4000
Seed maize/ha _____Kshs.3000
Labour requirement /ha _____ 200 man days.
Cost of fertilizers /ha _____Kshs 10,000
Cost of top dressing fertilizers _____Kshs 4,800
Cost of labour _____Kshs 150 per man - day

(i) What is gross margin?
(ii) Calculate the gross margin of each of the crops
(iii) From the calculation above which crop should the farm grow?
(d) Describe the environmental factors that may lead to poor yields in crop production

AGRICULTURAL ECONOMICS IV

1. Name **three** methods of grafting that are used in propagation of plants
2. a) The following transactions were extracted from Mr. Tembo's financial books for the year ending 31st Dec 2003.study and answer the questions that follow:

Particulars	**cost (ksh)**
Milk sale	8 000
Goat sale	500
Purchase of farm tools	1 000
Construction of zero grazing unit	10 000
Depreciation of machinery	800
Closing stock	16 000
Veterinary bills	400
Interest payable	750
Wages	4 800
Sales of cabbages	750
Sales of tea	4 700
Opening stock	12 000
Sales of heifers	9 400
Purchase of pesticides	300

(a) i) Prepare a profit and loss account for Mr. Tembo's farm for the year ending 31st Dec. 2003
ii) Calculate the percentage profit or loss made by the farm
b) i) Give **five** functions of farmer's cooperative societies
ii) Outline **five** common risks and uncertainties in farming

3. State **four** reasons for using certified seeds for planting
4. List any **two** financial statements which may be prepared on a farm
5. The following information was obtained from Lang'at's farm records for the year ending December, 2004. Study it and answer the questions that follow:-

Goats	4,000
Poultry	15,000
Causal workers	12,000
Opening valuation	150,000

His sales and receipts are as follows:

Mohair	75,000
Rabbits	3,600
Eggs to hotel	15,000
Closing valuation	200,000

(a) Prepare the profit and loss A/C of Lang'at's farm

(b) State the benefit of a profit and loss A/C to Mr. Lang'at

6. (a) List any **four** financial documents used in the farm

(b) Prepare a profit and loss account for Mr. Rob's farm for the year ending 31st Dec. 2009, given the following information:-

Sale of milk	Kshs.10,000
Sold two heifers	kshs.10,000
Cabbage sold	Kshs. 20,000
Debts payable	Ksh.4,200
Sold tomatoes	Kshs. 3,000
Veterinary bills	Kshs.2,500
Bought livestock feeds	Kshs.2,500
Purchase fertilizers	Kshs.5,000
Bought seeds	Kshs. 4,000
Debts receivable	Kshs.20,000
Opening valuation	Kshs.150,000
Closing valuation	Kshs.200,000

(c) Did the farm make a profit or a loss? Calculate the percentage profit or loss made by the Farm

(d) Explain the various ways in which farmers may adjust to risks and uncertainties

7. a) The following transactions were extracted from Mr. Tembo's financial books for the year ending 31st Dec 2003.study and answer the questions that follow:

Particulars	**cost (ksh)**
Milk sale	8 000
Goat sale	500
Purchase of farm tools	1 000
Construction of zero grazing unit	10 000
Depreciation of machinery	800
Closing stock	16 000
Veterinary bills	400
Interest payable	750
Wages	4 800
Sales of cabbages	750
Sales of tea	4 700
Opening stock	12 000
Sales of heifers	9 400
Purchase of pesticides	300

i) Prepare a profit and loss account for Mr. Tembo's farm for the year ending 31st Dec 2003

ii) Calculate the percentage profit or loss made by the farm

b) i) Give **five** functions of farmer's cooperative societies

ii) Outline **five** common risks and uncertainties in farming

8. At the end year ended 31/12/2005 Bidii farm recorded the following:

Perennial crops	250,000
Bank loans	30,000
Cash at hand	5,000
Bank overdrafts	15,000
Land	350,000
Unpaid wages	3,000
Debts receivable	20,000
Stocks in store	25,000

Livestock	200,000
Bank balances	100,000

(a) Prepare a balance sheet as at 31/12/2005
(b) Did Bidii farm qualify for a loan and why?

9. State **one** condition in which each of the following documents is used.
i) Invoice
ii) Delivery note
iii) Receipt

10. Below is a transaction showing Mrs.Okello's financial position in her business for the year 2009

-Purchase of pesticides	3,000 00
-Milk sales	8,000 00
-Sales of goats	5,000 00
-Construction of store	10,000 00
-Closing valuation	16,000 00
-Depreciation of machinery	3,000 00
-Interest payable	1,750 00
-Purchase of farm tools	800 00
-Veterinary bills	1,400 00
-Sales of tomatoes	1,750 00
-Wages	10,000 00
-Sales of heifer	10,000 00
-Opening valuation	12,000 00
-Sales of coffee	5,000 00

i) Prepare a profit and loss account for Mrs. Okello's farm
ii) Calculate the percentage profit or loss that Mrs. Okello made during the year 2009
iii) Explain **six** ways in which farmers adjust to risk and uncertainties in farming

11. Name **two** examples of liabilities in a balance sheet

AGRICULTURE ECONOMICS (V)

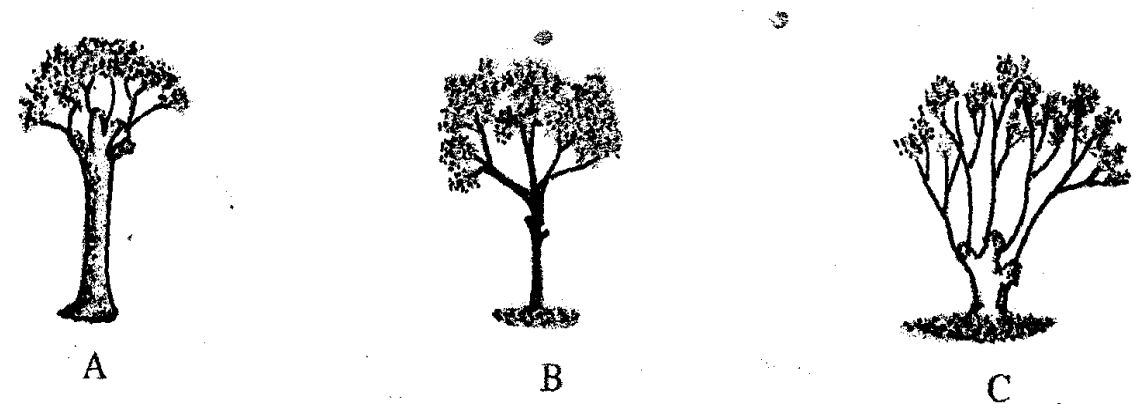
1. a) Explain the principle that govern the operations of farmers' co-operative societies
b) Explain the role of agricultural cooperatives in Kenya
c) Explain various functions of agricultural marketing
2. a) Give **four** marketing functions
b) Outline **four** problems associated with marketing of agricultural products
3. State **two** roles of agricultural society of Kenya
4. (a) What is elasticity of demand for a commodity
(b) Given that at a price of shs.1000 per bag, 20 bags of maize are demanded but when the price changes to shs.800 per bag, 22 bags are demanded. Calculate the elasticity of demand. Show your working
(c)Outline **six** problems of marketing maize as an agricultural product
(d) Determine **nine** principles governing cooperatives in Kenya
5. Outline **four** reasons why training is important in some crops
6. (a) Explain marketing activities in Agriculture
(b) Discuss problems experienced in marketing of Agricultural products
7. What is elasticity of supply
8. How do the governments control prices of essential farm produce
b) Explain the roles of Agricultural co-operatives in Kenya
9. State the law of demand and supply.
10. What do the following initials stand for?
(i) K.N.F.U – Kenya National Farmers Union
(ii) H.C.D.A – Horticultural Crops Development Authority
11. (a) What is a co-operative society

(b) List **two** functions of co-operatives
(c) State and explain the nine principles of governing co-operatives

12. Give **four** factors which influenced the demand of tomatoes in the market

AGROFORESTRY

1. State **two** reasons for seed treatment of tree species before planting
2. State **four** ways by which Re-afforestation help in land reclamation
3. List **four** advantages of agro-forestry
4. The illustrations below are techniques of harvesting agroforestry trees. Study them carefully and then answer the questions below:-



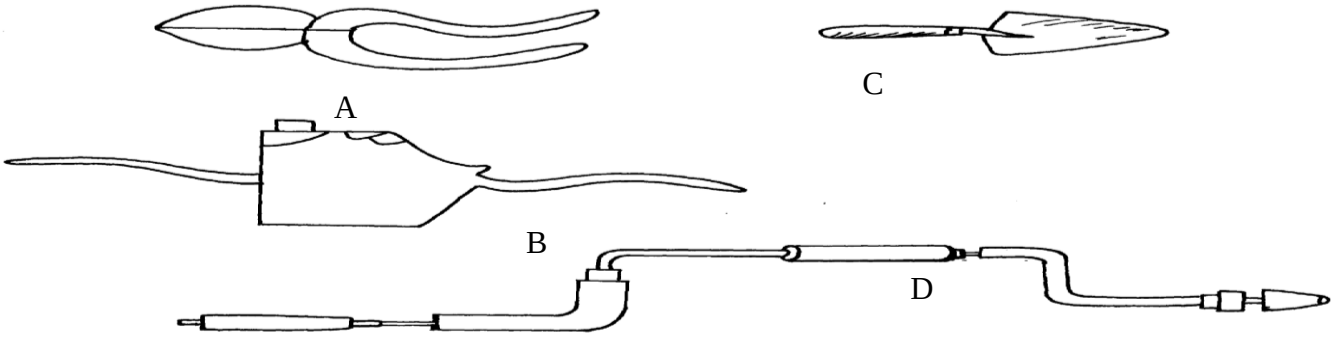
(a) Identify the harvesting techniques represented by techniques **A** and **B**
(b) Give an example of a tree species suitable for technique **B** and **C** as a method of harvesting

5. State **four** factors considered when choosing trees for Agroforestry
6. (a) Five characteristics of trees used in agroforestry are;
   (b) The benefits of agroforestry are:
7. Name **four** forms of agro- forestry
8. Give **four** characteristics that good agro-forestry tree should posses

PAPER ONE AND TWO
SECTION II QUESTIONS

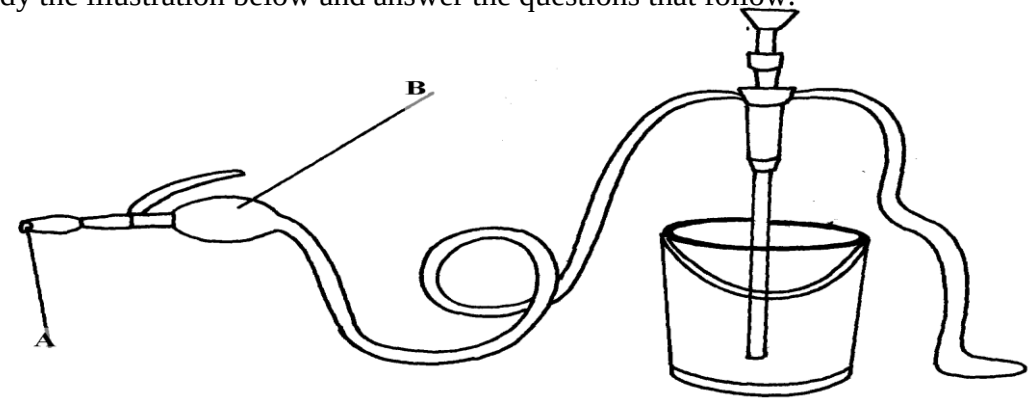
FARM TOOLS AND EQUIPMENT

1. List **four** maintenance practice carried out on a cross-cut saw
2. Identify the following tools and state their functions



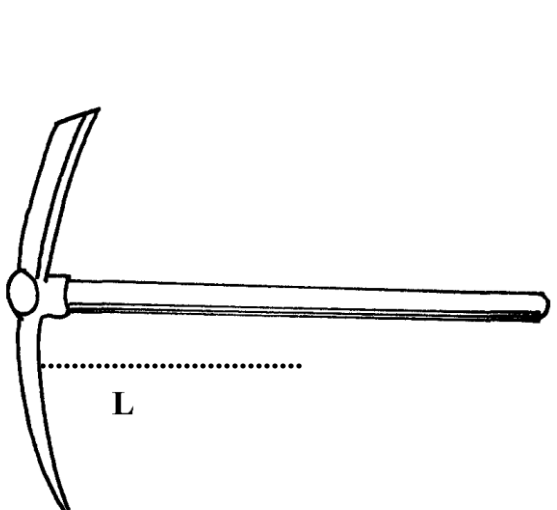
Identify A, B, C, D

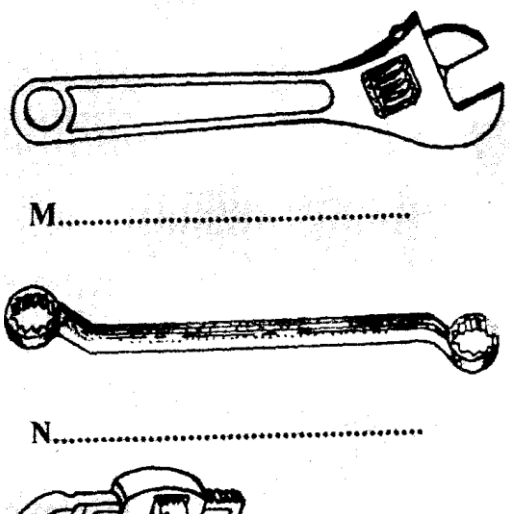
3. Study the illustration below and answer the questions that follow.



i) Identify the equipment represented by the illustration
ii) What is the use of the equipment?
iii) Name the parts labeled **A** and **B**
iv) What is the function of the part labeled **A** and **B**

4. What is the use of a garden fork?
5. Name the tool that a builder would use to check the vertical straightness of a wall during construction
6. Name the farm tool that can be used when removing nails from timber
7. Give **two** examples of equipment that a livestock farmer can use in administering oral anti helminthes
8. Below are farm tools, study them and answer the questions that follow:-





(a) Identify the tools L, M, N, O
(b) **Give one** functional advantage of tool **M** over tool **N**

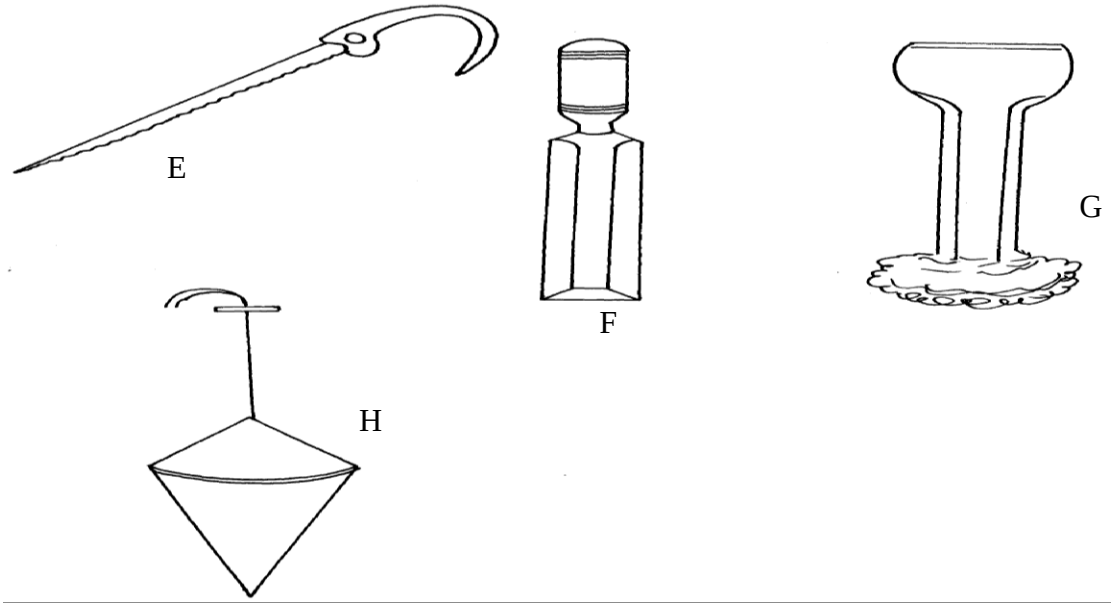
9. Name a tool used to perform the following functions on the farm;
(i) Drilling of small holes on metal
(ii) Bore holes on wood

10. State the common faults in the operation of Knapsack spray

11. (a) Name the **three** tools in castration of livestock

12. Name the most appropriate set of animal handling tools that a farmer uses for the following operations:-
(i) Restraining a large bull when taking it around the show ring
(ii) Cutting tail in sheep

13. a) Below are illustrations of farm tools



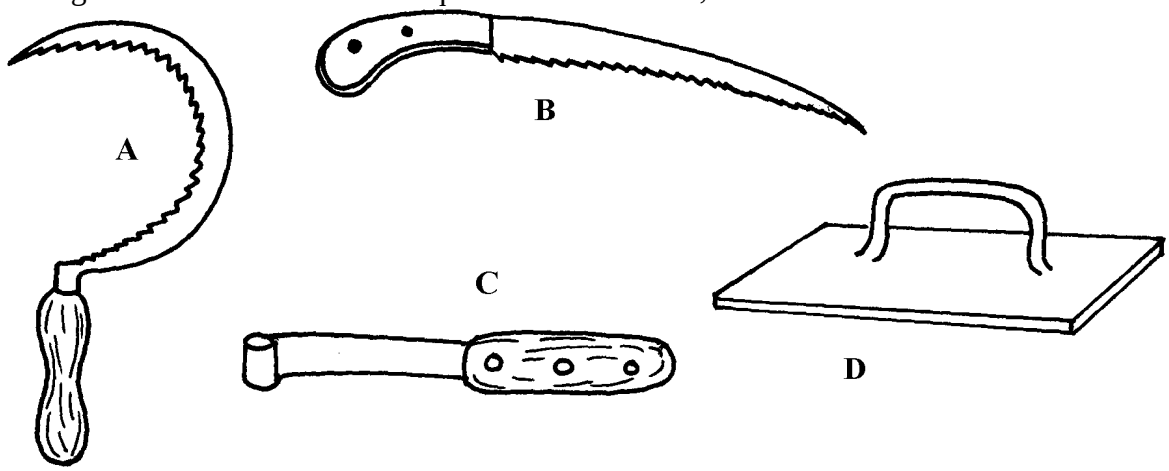
i) State the use of the tools
ii) Name the type of hammer that may be used for driving tool **K** during work

b) Given below is an illustration of one of the routine management practices in livestock Production.
Study the diagram and answer the following questions



i) Name the practice indicated in the diagram above
ii) Describe the procedure you would follow when carrying out the practice named in **(i)** above in piglets

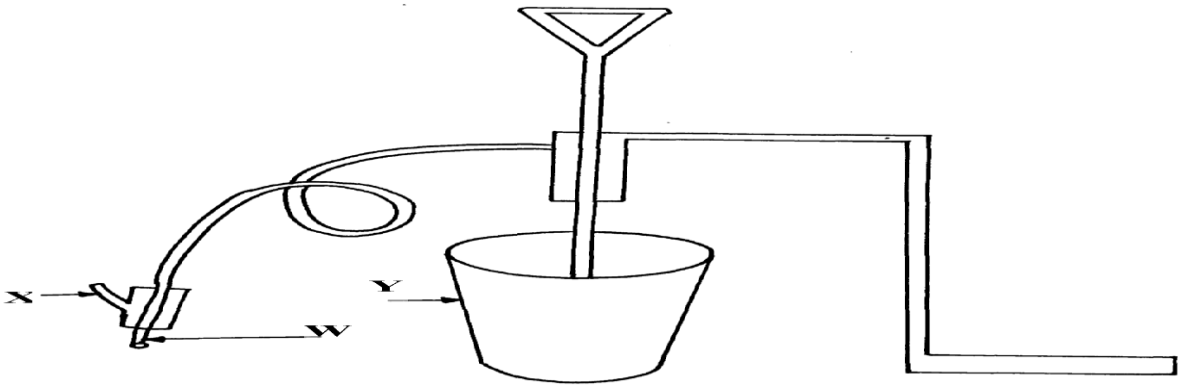
14. Study the diagram below and answer the questions that follow;



i) Identify the tools
ii) Give the use of each of the tools named above
iii) State **two** maintenance practices that should be carried out on tool **D**

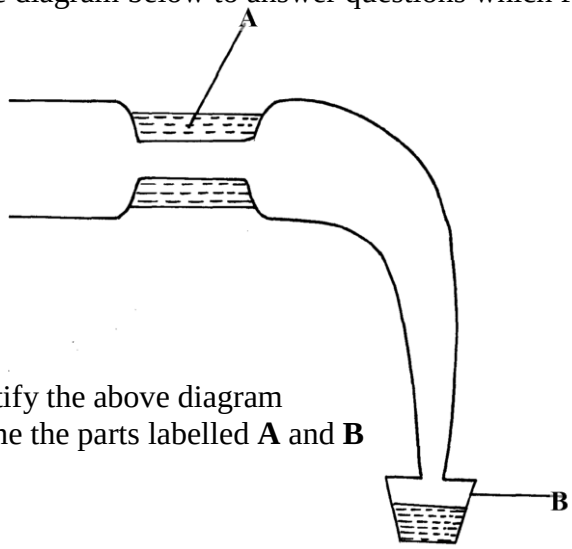
15. List **two** equipments used in handling cattle during an Agricultural exhibition
16. Mention the use of the following tools.
i) Dibber
ii) Spokeshaves
iii) Tinsnips
iv) Burdizzo

17. List **four** precautions that should be taken when using workshop tools and equipment.
18. i) Below is an illustration of a farm equipment. Study it and answer questions that follow



a) Identify the farm equipment illustrated above
b) What is the use of the equipment
c) Name the parts labelled **W, X** and
d) What is the functions of **Y** on the equipment

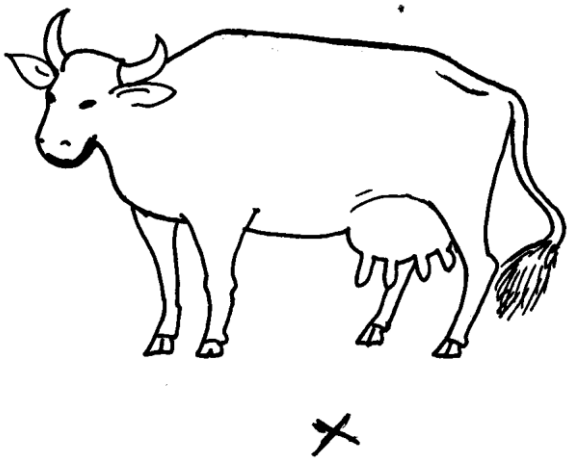
19. Use the diagram below to answer questions which follow



i) Identify the above diagram
ii) Name the parts labelled **A** and **B**

LIVESTOCK PRODUCTION I
COMMON LIVESTOCK BREEDS

1. State **two** reasons for treating water for us on the farm
2. State **four** advantages of applying lime in clay soil
3. State **four** ways by which Re-afforestation help in land reclamation
4. Give **two** distinguishing features between the following breeds of rabbits; Kenya white and California white
5. Give **four** reasons why most farmers keep livestock in Kenya
6. Give **three** ideal conformation features of beef cattle
7. (i) Name a dual purpose cattle breed reared in Kenya
   ii) State **three** uses of a rotavator
8. Name a pig breed with the following features:
   White body colour, erect ears, dished snout, big in body size
9. What does the term '**epistasis**' mean in livestock improvement?
10. (a) Explain the role of livestock industry in Kenya's economy
    (b) Outline the general characteristics of indigenous cattle
11. Below is a diagram of a cattle. Study it an answer the questions that follow:-

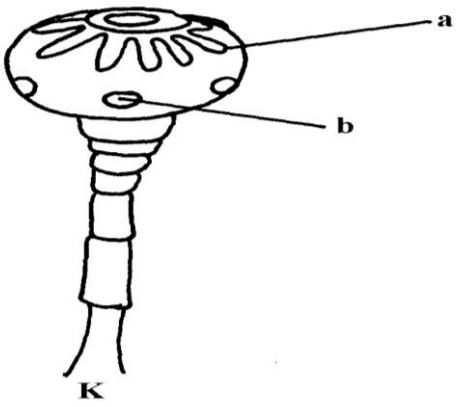


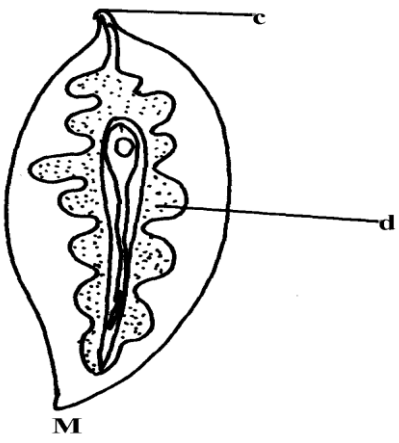
(i) What type of animal is represented above?
(ii) If you stand at a point marked **X**, state **five** characteristics that tells you that the animal belong to type name in **(i)** above?
(iii) State **three** areas on the body of a cow where ticks are commonly found

12. Name **four** breeds of dairy goats
13. List **two** distinguishing characteristics of Californian breed of rabbit
14. Name the common milk breed of goats reared in Kenya
15. Name **four** dairy cattle breeds reared in Kenya.
16. Differentiate between 'breed' of animal and 'type' of animal.
17 Name the camel breed that is adapted to cooler regions and has a woolly body covering
18. State any **two** channels through which beef is marketed in Kenya.

(LIVESTOCK HEALTH II
(LIVESTOCK PARASITES)

1. Name **two** chemical methods used in deworming cattle
2. a) state **six** effects of parasites
   b) Describe the life cycle of *Taenia solium* species of tapeworm
   c) State **four** control measures of the tapeworm
3. Give **two** functions of calcium in dairy cows
4. Give **two** control measures of fleas in a flock of sheep
5. Give **two** measures a poultry farmer can use to control fleas in flock
6. State **two** reasons why drenching alone is not an effective method of controlling internal parasites
7. Give t**wo** forms in which a tape worm is found in livestock
8. Below are diagrams showing different types of internal parasites. Study them carefully and answer the questions that follow:-





a) Identify the parasites **K & M**
b) Identify the parts labelled
c) Name the organs where each parasites is found
d) Give the intermediate host of parasite **M**

9. Give any **two** effects of external parasites that are harmful to livestock
10. Outline the procedure followed when hand-spraying cattle to ensure effective use of acaricides to control ticks
11 a) A boar gained 90Kg live weight after eating 360Kg pig finisher meal over a period of time. Calculate the feed conversion ratio
b) Describe digestion in the four stomachs of the ruminant animal
c) Give the significance of lubrication system
12. State **four** ways of controlling tsetseflies
13. Name **two** types of roughages
14. Name the common milk breed of goats reared in Kenya
15. Why are the element calcium and phosphorus important in the diet of young livestock?
16 Give **two** parasites of cattle which are also disease vectors
17 Give **three** control measures of fleas in a flock of layers

LIVESTOCK PRODUCTION II (NUTRITION)

1. Give **two** ways by which production ration may be utilized by dairy goats
2. Given that the livestock reared require a ration of 18% DCP and the farmer has maize bran of 10% DCP and sunflower meal of 30% DCP. Use Pearson's square method to calculate how much of the feedstuffs a 150kg rations
3. State the importance of the following in livestock nutrition: i) Water
ii) Vitamin A
4. Name the compartment of the ruminant stomach where microbial digestion takes place.
5. i) A ration containing 18% protein is to be made from maize and sunflower cake. Given that maize contains 7% protein, and sunflower seed cake 34% protein. Use Pearson square method to calculate the value of feedstuffs to be used to prepare 100kgs of the feed
ii) A part from Pearson square method, name **two** other methods that can be used to formulate feed ration
6. (a) Define the term ration as used in livestock nutrition
(b) A farmer wanted to prepare a 200kg of pig's ration containing 16% D.C.P. Using the persons square method, calculate the amount of maize containing 10% D.C.P and cotton seed containing 28% D.C.P the farmer would need to prepare the ration (***show your work***)
7. Give **two** livestock feed additives
8. State **three** factors that would determine the amount of concentrate fed to dairy cattle
9. State **three** factors that would determine the amount of concentrate fed to dairy cattle

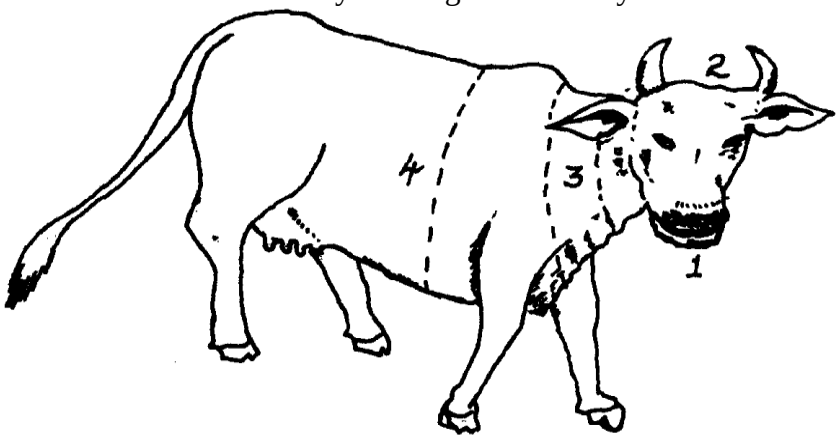
LIVESTOCK PRODUCTION III (SELECTION AND BREEDING)

1. State **four** ways of minimizing disowning of lambs by ewes
2. State the gestation period of the following farm animals
i) Pigs
ii) Rabbits
3. i) What is selection in live stock production
ii) State **three** methods used in selection of livestock
4. Give **four** signs of heat observed on female rabbit
5. Name **four** meat breeds of rabbits

6. State **four** reasons for cutting a breeding boar
7. List the methods of selection in livestock
8. Define the following terms as used in livestock breeding
   i) Heterosis
   ii) Epistasis
9. State **three** signs of heat in Does (Female Rabbits)
10. Give the gestation period of the following:
    i) Cow
    ii) Sow
11. State **three** disadvantages of natural methods of mating in cattle breeding
12. a) Explain the advantage of battery cage system of rearing layers
    b) Outline **ten** factors considered when selecting dairy cattle for breeding
13. What is upgrading as used in livestock production?
14. Define the word breech of birth as used in livestock production
15. What does the term "**drift lambing'** mean in livestock production?

LIVESTOCK PRODUCTION IV
(LIVESTOCK MANAGMENT PRACTICES)

1. Give **four** reasons of carrying out crutching sheep management
2. Name **two** ways a farmer can perform closed methods of castration on his male livestock
3. Below is a diagram of a farm animal. Study the diagram carefully and then answer the questions that follow



   a) On the drawing, mark the letters indicated in brackets the part of the animal where:
      i) Branding should take place (B)
      ii) Vaccination should be carried out (V)
      iii) Body temperature of the animal should be taken (BT)
      iv) Mastitis infection may occur (M)
   b) Name **three** areas of the animal body where ticks are likely to be found
   c) Name the parts of the animal numbered 1-4

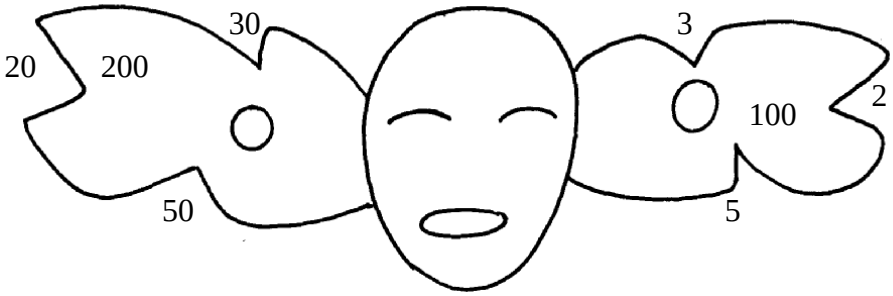
4. a) What is castration as used in livestock production?
   b) State **four** reasons why castration is done in livestock
5. (a) Describe the management of a gilt from weaning to furrowing
   (b) Discuss the preparation a poultry farmer should make before the arrival of day old chicks
6. Outline **two** reasons for raddling in sheep management
7. State any **fou**r reasons for castrating male piglets
8. What are the methods of stocking bees? Give **two**.
9. State **two** ways that show how good feeding help to control livestock diseases
6. Name any **two** recommended methods of docking lambs
7. State three disadvantages of inbreeding
8. State **four** routine management practices that should be carried out on a lactating ewe
9. (a) Describe the procedure which should be followed to castrate a three weeks old piglet using

surgical method

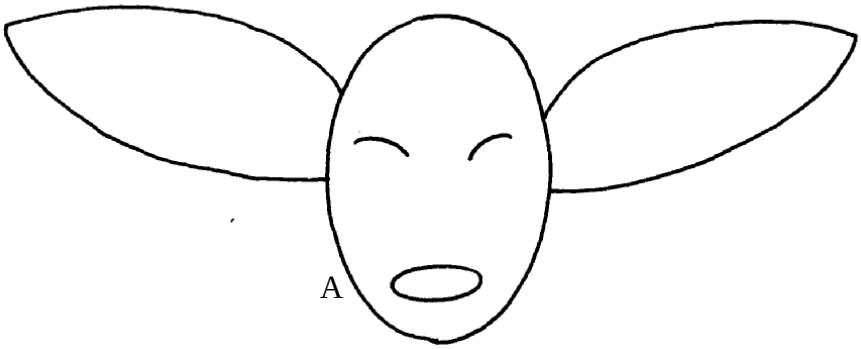
(b) (i) State **five** factors that should be considered when sitting a bee hive in a farm

(ii) Describe the management practices that would ensure maximum harvest of fish from a fish pond

10. Give **three** types of bees found in a bee colony
11. List **three** methods of castrating farm
12. Outline the routine management practices of piglets from the 1st day to the 8th week
13. List **three** types of calf pens
14. State **two** factors that could lead to failure to conceive in sows after service
15. List **three** advantages of hoof trimming in sheep production
16. State **four** factors considered when citing an apiary in the farm
17. Name **three** methods of stocking a beehive with honey bees
18. List **three** common methods of extracting honey from the combs
19. a)The illustration below shows a method of identifying pigs, study the diagram and answer the questions that follow:-



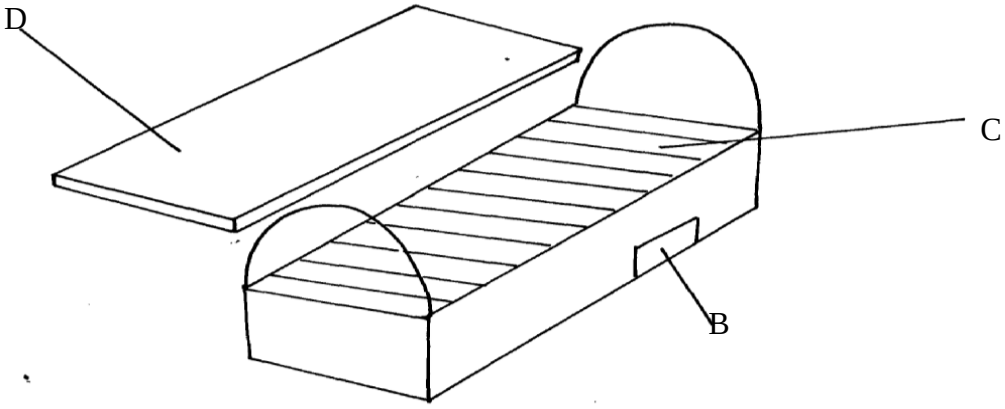
i) On the diagram **A** provided below, draw the mark to indicate a pig number 147, using the procedure of ear-notching in diagram



ii) What is the recommended stage of growth in pigs at which the ear-notching should be carried out?

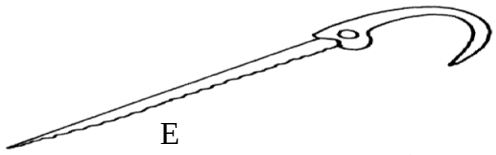
iii) State any **three** reasons why weight is an important routine management practice in pig production

b) Below are illustrations showing the various parts of the Kenya top bar hive. Use the illustration to answer the question that follow

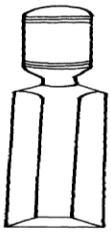


i) label the parts **B ,C** and **D**
ii) How can a farmer attract bees to colonize a new hive?
iii) Outline the procedure of opening the hive to harvest honey

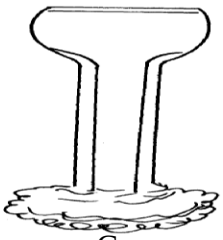
20. a) Below are illustrations of farm tools



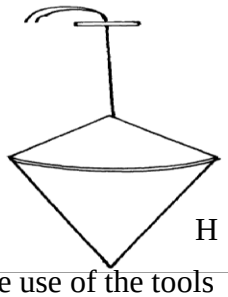
E



F

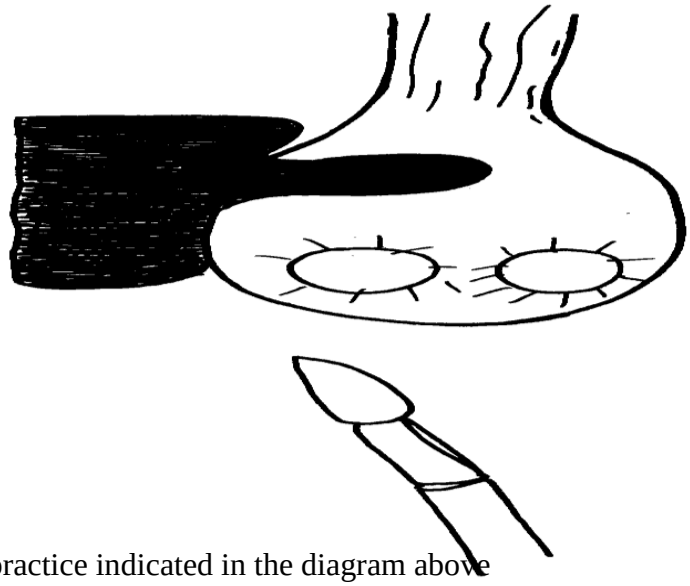


G



H

ii) State the use of the tools
iii) Name the type of hammer that may be used for driving tool **F** during work
b) Given below is an illustration of one of the routine management practices in livestock production.
Study the diagram and answer the following questions



i) Name the practice indicated in the diagram above
ii) Describe the procedure you would follow when carrying out the practice named in **(i)** above in piglets

21. a) State and explain **four** advantages of age grouping farm animals as a management practice
b) Explain **four** major causes of lamb mortality from birth to weaning
c) Describe brucellosis under the following sub headings
i)Cause
ii) Transmission
iii) Symptoms
iv) Control measures

22. a) Explain the advantage of battery cage system of rearing layers

23. Give **two** reasons why it is important to castrate animals when they are still young

24. (a) Give **two** reasons why dehorning is carried out in farm animals
(b) State **four** methods of dehorning livestock

25. (a) What is **steaming up** in livestock production?
(b) Give **two** reasons why the practice is important in pig rearing

26. State **four** management practices that should be carried on a fish pond in order to obtain

maximum fish production.

27. List four factors considered when formulating livestock ration. (2mk)

28. Study the diagram of a cow below and answer the subsequent questions



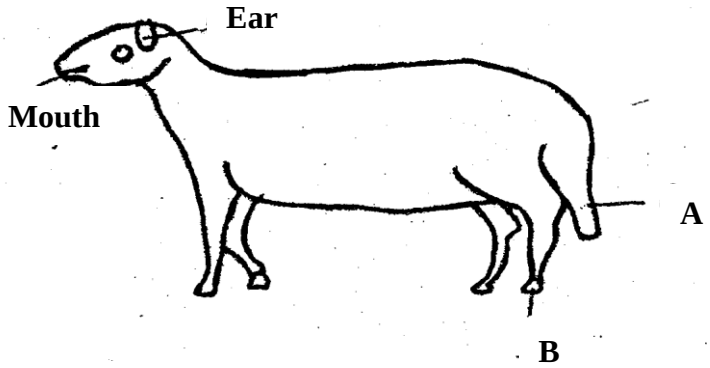
i) Identify the livestock equipment marked **E** above
ii) State **two** uses of the equipment in **17(i)** above
iii) Name the **two** types of identification marks applied on the animal above
iv) Show with an arrow and mark with letter **P** where pye-grease acaricide should be applied on the anima1
v) Give **one** disadvantage for each of the identification marks made on the animal

Identification marks	**Disadvantage**
A	
B	

29. a) Describe the management practices of a gilt from weaning to the time of farrowing
b) State **five** factors to consider in selecting a gilt for breeding stock.

28. State **four** conditions that necessitate the handling of farm animals .
29. Give any **two** reasons why docking is an important practice in sheep management.
30. Why is crutching a very important management practice in sheep breeding.

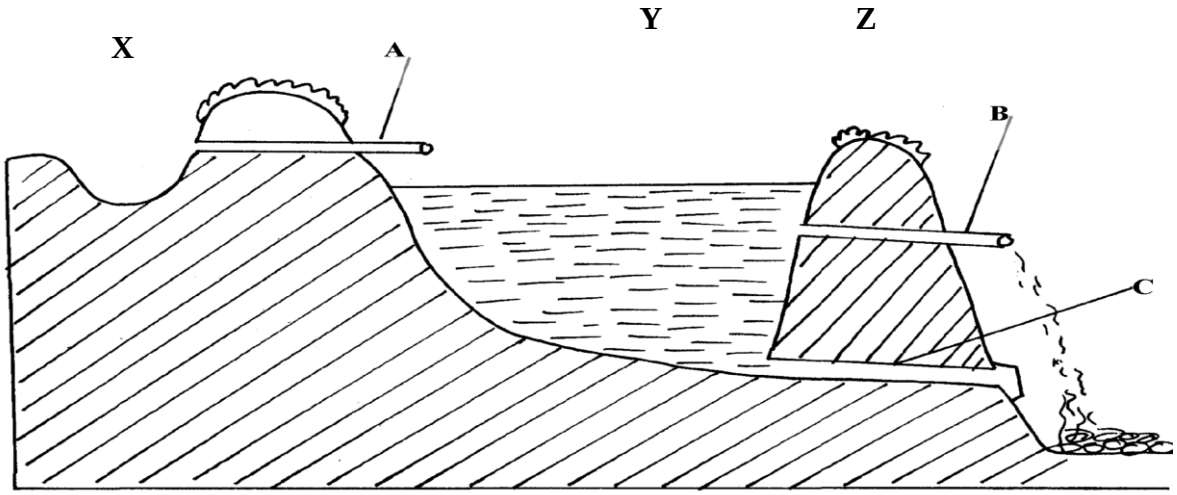
31. Study the diagram of a sheep shown below carefully and answer the questions that follow:



(i) What operation is usually carried out on the part labelled **A?**
(ii) Give **two** reasons for carrying out the operation in **(i)** above
(iii) At what age should the above operation be carried out?
(v) Name routine management practice carried out on the part labelked **B**

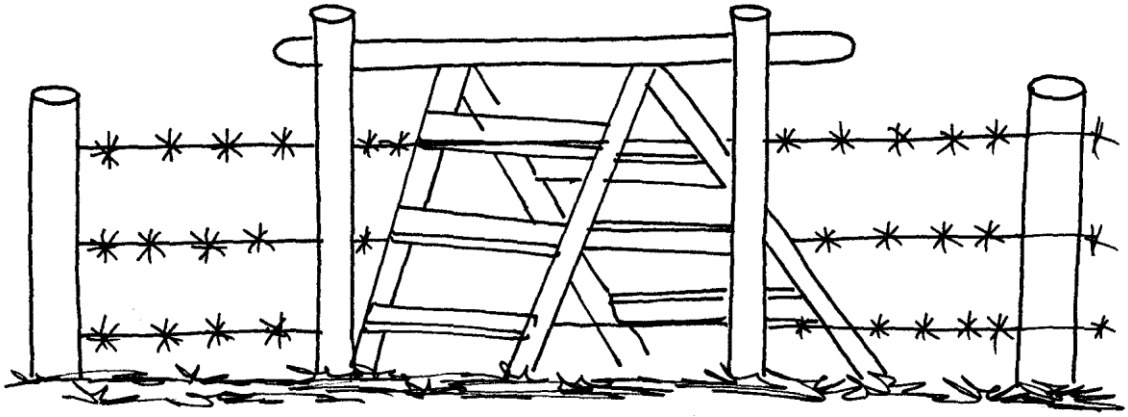
FARM STRUCTURES

1. Mention **four** disadvantages of using steel materials for construction of farm structures
2. Give **two** reasons for placing a polythene sheet on a foundation of farm buildings
3. What is "**calf crop**" in beef production?
4. a) Outline the procedure in construction of a barbed wire fence
   b) List any **four** wood preservatives
   c) Give **four** factors that will determine the choice of farm building materials
5. i) Give **four** factors considered when citing a fish pond
   ii) Give **four** features of a good laying nest
6. State **two** uses of a footbath in cattle dip
7. a) What is a green house
   b) Name **four** materials used in green house construction
   c) Give **four** maintenance practices carried out on a green house
   d) Explain the importance of maintaining farm structures
8. Give **two** disadvantages of a barbed wire fence when used in paddocking
9. The diagram below illustrates a cross-section of a fish pond. Study it carefully and answer the questions that follow:-



   (a) Identify the parts marked **A, B**, **C** and **C**
   (b) On the diagram the points marked **X**, **Y** and **Z** are possible sites where fish feeding can be done. Which is the most appropriate point for feeding?
   (c) Give **two** reasons why the floor of the pond should be covered with lime 14days before filling it with water
   (d) Why should part marked **B** be screened?
   (e) State **three** maintenance practices carried out on the structure

10. Study the farm structure below illustrating a pass:-



(a) Identify the type of pass illustrated above
(b) Distinguish between a pass and a gate
(c) Name **one** type of live fence

11 State **four** requirements of a good maize store

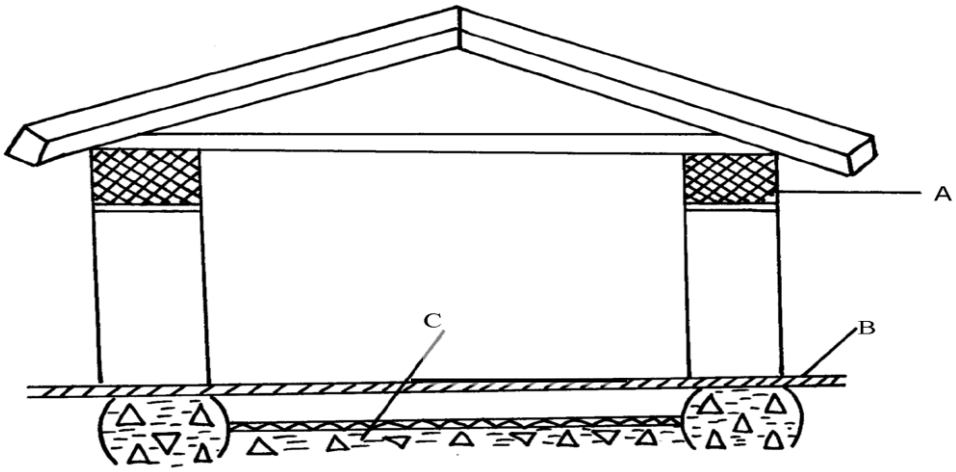
12 State **three** factors that determine the depth and size of foundation in a farm building

13 (a) Explain the uses of various hand tools in the construction of a poultry house
(b) Describe the procedure of erecting wooden rail fence
(c) Explain various factors considered when choosing the construction materials for farm building

14 State **four** features of a good calf pen

15 State **four** uses of a fence

16 Below is a diagram of a cross section of a farm structure. Study it carefully and answer the following questions.



(i) Identify the labeled parts **A, B,** and **C**
(ii) What is the importance of the part labeled **B** to the structure
(b) (i) When making concrete blocks the ratio 1:3:5 may be used. What do these figures represent?
(ii) In a concrete mixture 1:3:5, twenty four cubic metres of sand were recommended to be used in putting up of a foundation of a building. Find the volume of the other two

17 (a) Explain the maintenance practices of a fish pond
(b) Give **four** ways of controlling fish predators in a fish pond

18 Mention **four** reasons of treating timber before roofing farm buildings

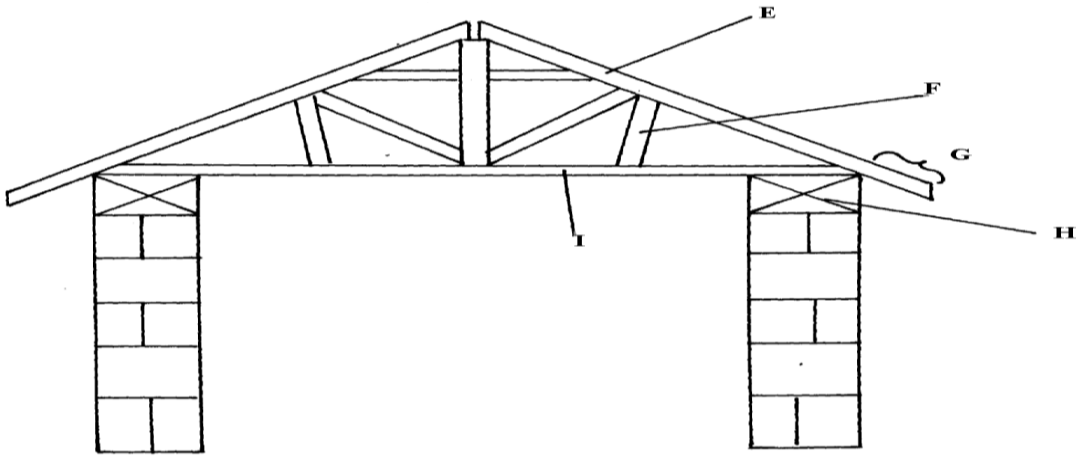
19 List **four** uses of crushing in the farm

20 a) Define the term **fence**

b) List various types of fences

c) Describe advantages of fences

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

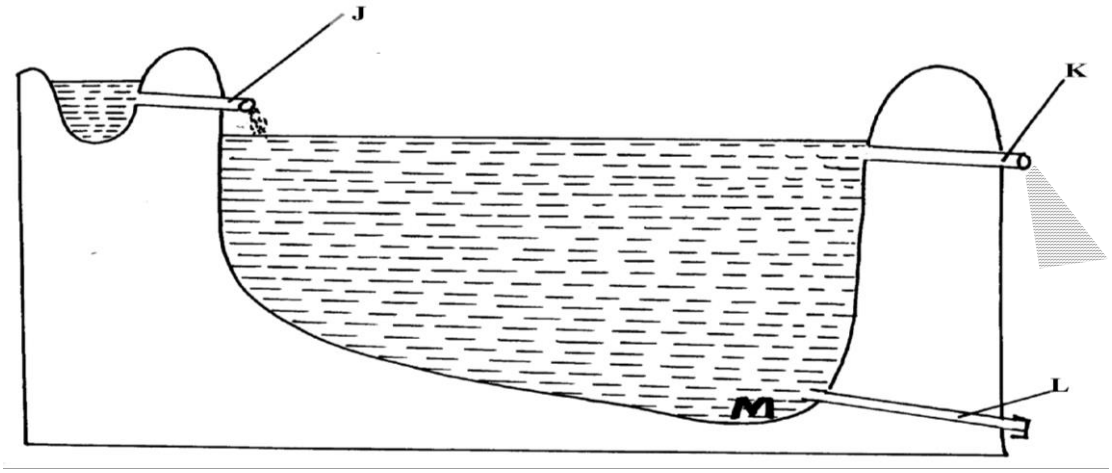


i) Name the parts labeled

ii) State the function of the parts labeled

iii) Name **two** chemicals preservatives used to treat the wooden parts of the structure against insects and fungal damage

21. Below is a diagram of a fish pond, study it and answer the questions that follow



i) Label the parts marked **K** and **L**

ii) Give a reason why part **M** is usually deeper than the rest of the pond

iii) State **three** maintenance practices carried out in the pond

22. a) Explain **five** factors to consider when siting a fish pond

b) Explain the measures used to control livestock diseases

23. State four factors which influence the selection of materials for constructing a diary shed

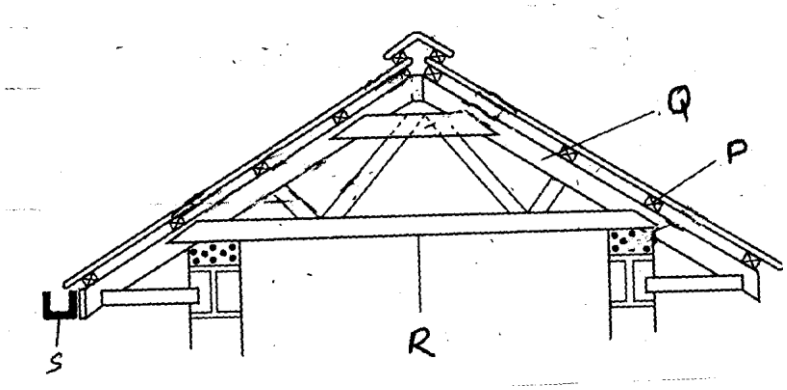
24. a) State **five** maintenance practices of a mould board plough

b) Explain **five** structural and functional differences between the petrol and diesel engines

c) List **five** uses of farm fences

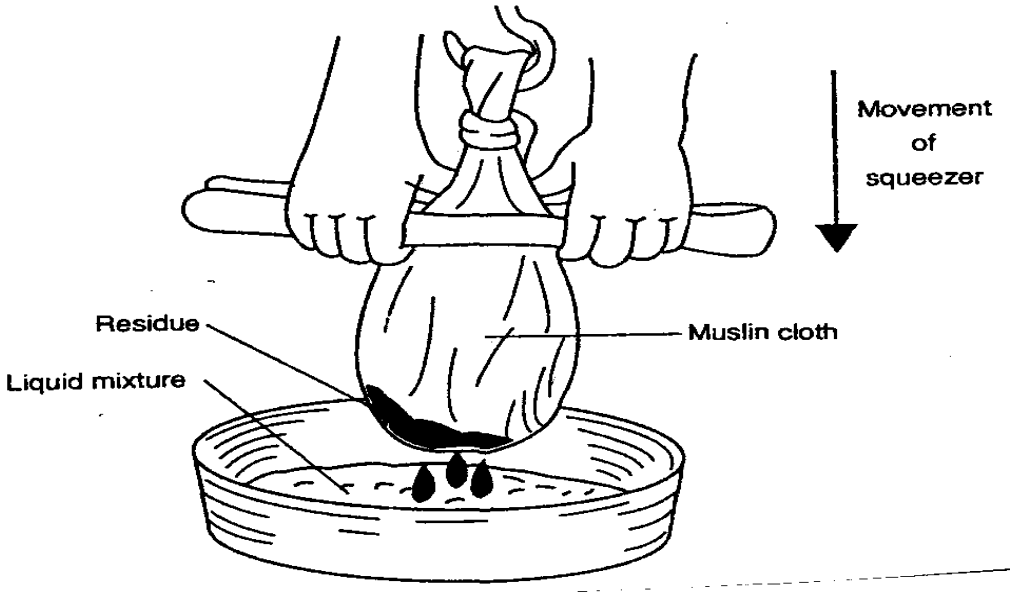
25. State **four** uses of farm buildings

26. List **four** structural requirements for proper housing of farm animal to maintain good health
27. The diagram below is part of a farm structure. Study it and then answer the questions that follow:



(a) Name part of structure represented above
(b) Identify parts labeled **P, Q, R,** and **S**
(c) Give the functions of the part labeled **P** and **S**

28. The diagram below shows an activity of processing a farm product. Study it and answer the questions that follow:



(a) Name the product being processed
(b) Identify the method used in processing the product names in the diagram
(c) Outline the procedure used when harvesting the product named in the diagram
(d) List **two** factors that affect quality of the product processed in the diagram

31 (a) Describe **five** parts of a plunge dip
(b) Outline **six** uses of live fences on the farm
(c) Outline **four** factors that influence power output of drought animals

32. a) Explain the factors a farmer needs to consider before siting a farm structure on his farm
b) Outline the desirable features of a good grain store
c) Describe the uses of farm fences in promotion of agriculture

33. Name any **two** pests that attack timber used for construction in the farms
34. State **three** factors that may lead to dip wash being exhausted or weakened while in the dip tank

LIVESTOCK HEALTH III
(LIVESTOCK DISEASES)

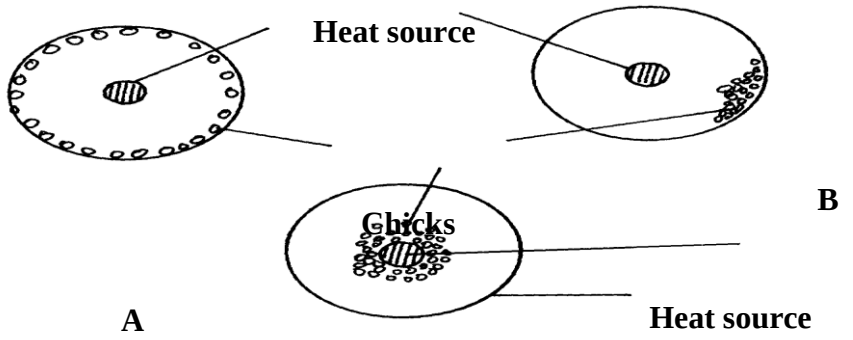
1. Name **two** diseases that affect female animals only
2. Give **four** pre disposing factors of foot rot disease in sheep
3. i) Name the causative organism of contagious abortion in cattle
   ii) Give **four** symptoms of contagious abortion in cattle
   iii) State **three** methods of controlling contagious abortion in cattle
4. What is a vaccine?
5. (a) Discuss black quarter under the following sub-headings:-
   (i) Animal affected
   (ii) Casual organism
   (iii)Symptoms of disease
   (iv) Control measures
   (b) (i) Explain **four** measures used to control liver flukes
   (ii) Name an intermediate host of liver fluke
   (c) Explain the following terms as used in livestock production
   (i) Embryo transfer
   (ii) Artificial insemination
   (iii) Line breeding
   (iv) Cross breeding
   (v) Up-grading
6. Give **four** predisposing factors of foot rot disease in sheep
7. (a) Discuss **coccidiosis** disease under the following headings:-
   (i) Causal organism
   (ii) Livestock species attacked
   (iii) Symptoms of attack
   (iv) Control measures
   (b) (i) What are the characteristics of an effective acaricide?
   (ii) Explain **three** methods of acaricide application
8. Name **four** ways of controlling coccidiosi in the farm
9. State **four** predisposing factors of scour in calves
10. Name **four** notifiable diseases of livestock
11. Name **two** diseases of poultry that are controlled by vaccination
12. State **three** signs of anthrax injection disease observed in the carcass of a cattle
13. Differentiate between active immunity and acquired passive immunity
14. Name **four** systems of a tractor engine
15. State **two** adjustments that should be carried out on a tractor – mounted mould board plough in preparation for ploughing
16. List **three** causes of ruminal lympany (Bloat) in ruminant animals
17. (a) Give **four** symptoms of milk fever
    (b) State **two** methods of controlling milk fever
18. (a) Describe East Coast Fever (E.C.F) under the following sub-topics:
    (i) Animal attacked
    (ii) Causal organisms
    (iii) Symptoms of attack
    (iv) Control and treatment
    (b) Explain **ten** measures used to control livestock diseases

29. Name **two** livestock diseases that are spread through natural mating.

20. a) Give the method used in introducing a vaccine to poultry against fowl typhoid
b) State other methods introducing vaccines to livestock

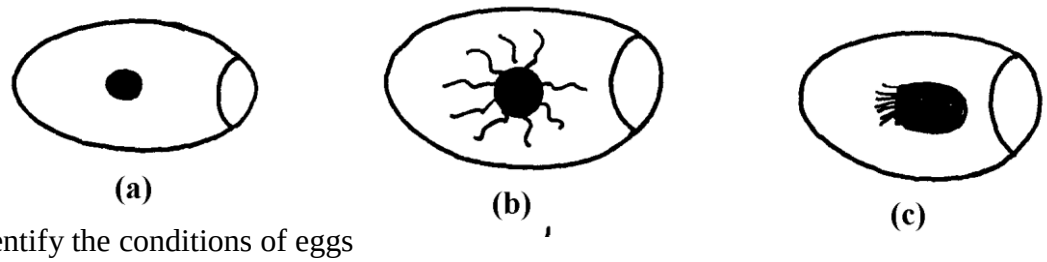
LIVESTOCK PRODUCTION V
(POULTRY)

1. A deep little poultry house measures 9mx3m. Suppose the amount of space allowed for one bird is $0.27m^2$.Calculate the number of birds that can be kept comfortably in the house. Show your working
2. Give **two** functions of isthmus in female bird
3. Give **four** features of a good laying nest
4. State **four** qualities of marketable eggs
5. Study the diagram showing the behaviour of chicks in a brooder and answer the questions that follow:-



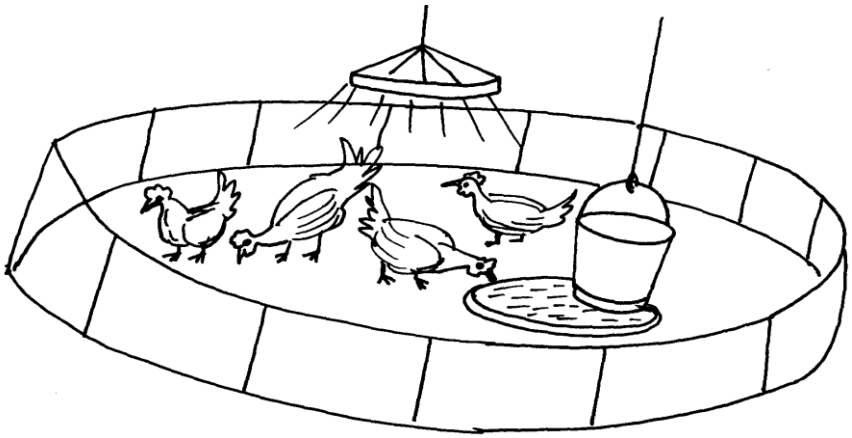
(a) State the behaviour of chicks in **A, B** and **C**
(b) Explain why the brooder guard is rounded as shown in the diagram

6. Mention **six** characteristics of an egg selected for incubation
7. Describe the management of layers in deep litter system
8. State **four** reasons for egg breaking and drinking by layers in a deep litter rearing system
9. Below are diagram showing condition of eggs seven days after incubation study them and answer the questions



a) Identify the conditions of eggs
b) Identify the egg which suitable for incubation and give a reasons for your answer
c) Name the practice which used to determine the state of eggs above

10. The diagram **U** below illustrates an activity carried by a poultry farmer keeping layers. Study the diagram carefully and answer the questions that follow

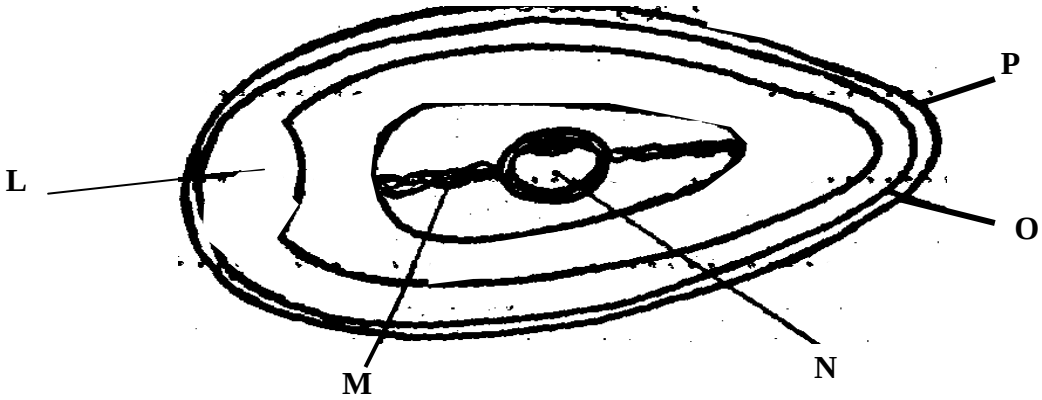


a) Identify the activity carried out using the set up illustrated in diagram **U**

b) List down **four** preparations that should be carried out structure **U** before arrival of day old chicks

c) List down **one** behaviouristic activity which would indicate that the chicks are under stress

11. Give **two** reasons for using litter in a poultry house
12. Give **two** reasons why it is important to castrate animals when they are still young
13. (a) Give **two** reasons why dehorning is carried out in farm animals
    (b) State **four** methods of dehorning livestock
14. State **four** abnormalities of eggs that can be detected during egg candling.
15. Describe the management of day old chicks in a deep litter system from preparation of brooder up to eight (8)weeks old
16. a) Describe the management practices of a gilt from weaning to the time of furrowing
    b) State **five** factors to consider in selecting a gilt for breeding stock.
17. Study the diagram of an egg be1ow and answer the questions that fol1ow:



i) Name the parts labeled **N, O** and **P**

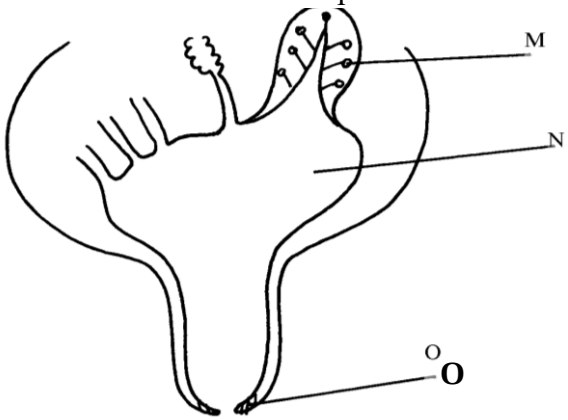
ii) State the functions of the parts **M** and **L**

iii) Why should the egg be turned during incubation

18. State **three** reactions of chicks in a brooder which has higher temperature than normal.
19. Give **three** types of bedding material a poultry farmer may use in deep litter rearing of layers
20. Give **two** properties of good eggs for incubation

LIVESTOCK PRODUCTION III
(LIVESTOCK REARING PRACTICES)

1. What is "**calf crop**" in beef production?
2. a) Describe the procedure of hand milking in a dairy cow
   b) Explain the practices observed in clean milk production
3. Give **two** reasons for washing a cow's udder with warm water before milking
4. Give **two** roles of uterus in egg formation process
5. The diagram below is a structure of part of a cow's udder



   (i) Name the parts labeled **M, N,** and **O** on the diagram above
   (ii) State the functional difference between the following hormones which influence milk let-down;
   (a) (i) Oxytoxin
   (ii) Adrenalin
   (b) Mention **three** qualities of clean milk
6. Give **four** characteristics of clean milk
7. State **three** maintenance practices carried out on a milking machine
8. State **four** reasons for feeding Colostrums to calves immediately after calving
9. Give **three** ways of stimulating milk let down in a dairy cow
10. a) Describe the operational differences of a disc plough and mould board plough
    b) Explain **six** marketing problems affecting dairy farming in Kenya
    c) State **four** reasons for culling a boar
11. List **three** advantage of artificial method of calf rearing
12. State **three** methods that may be used to improve milk production in a breed of indigenous goats
13. (a) Outline **ten** physical characteristics between a good layer and a poor layer in a deep litter house
    (b) Describe **five** factors that influence milk production in a dairy herd
14. a) State **two** reasons for washing the udder of a cow with warm water before milking.
    b) Name the hormone that causes each of the following in dairy cows:.
    i) milk letdown.
    ii) lactogenesis
15. State **four** methods of increasing the depth of penetration of a disc harrow.
16. List **four** farm machines implements that obtain power from P.T.O shaft of a tractor
17. List **two** tractor drawn implements used for breaking hardpan in a crop field
18. State any **three** machines which are used for harvesting crops
19. a) describe the daily maintance and servicing of a tractor before use
    b) State **one** function of each of the following parts of a tractor engine.

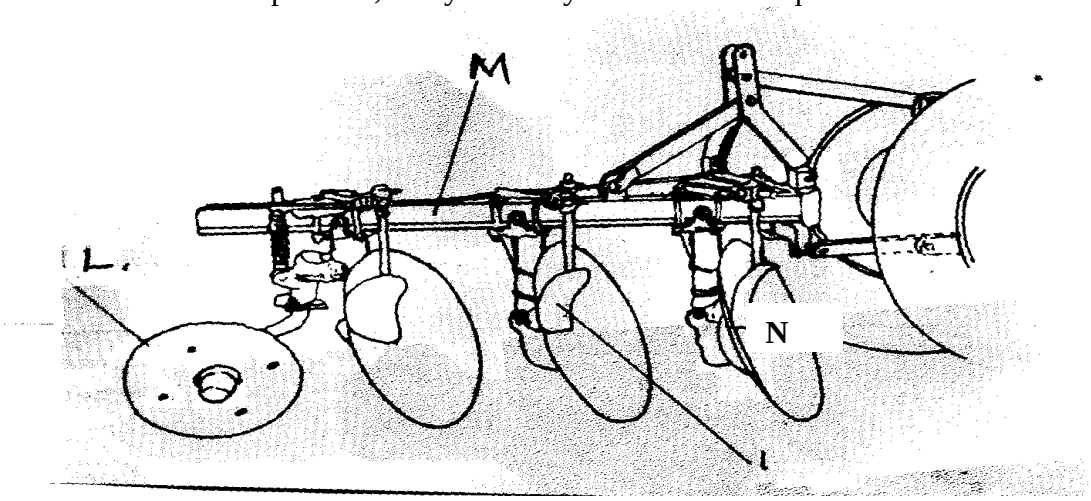
i) Fly wheel
ii) Ignition coil
iii) Thermostat
iv) Injector
v) Piston

FARM POWER AND MACHINERY

1. Give **four** farm operations powered by engines

2. a) Describe the maintenance practices required on a tractor before it is put to daily use
   b) Outline the factors that influence the power output by a draught animal

3. State **two** uses of gear box in a tractor
4. State **two** uses for which wind power is harnessed
5. Name **three** implements that are connected to the power take-off shaft
6. Below is a farm implement, study it keenly and answer the questions that follow:-



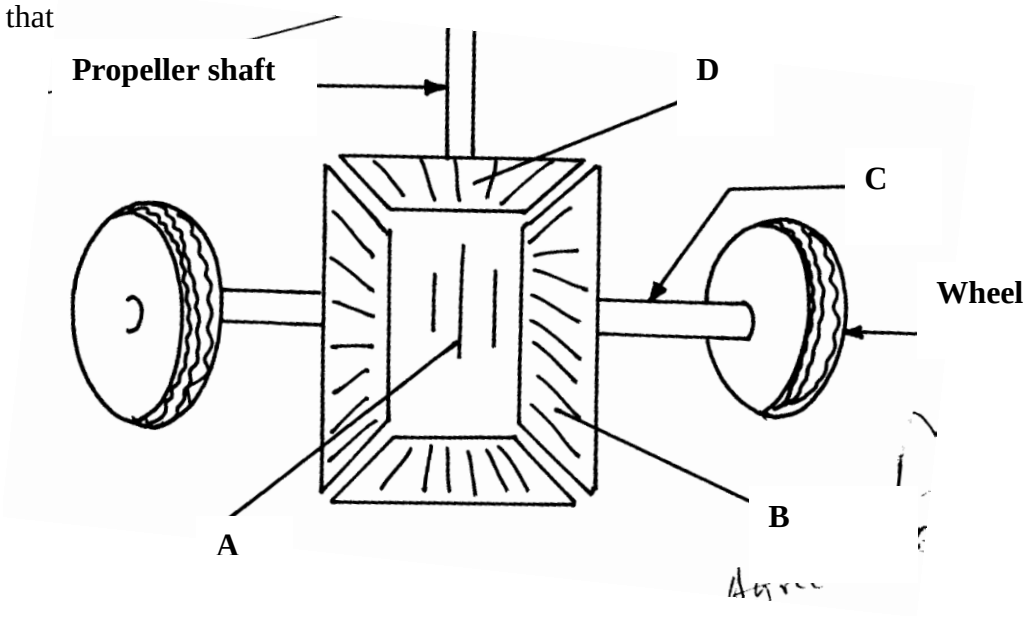
(a) Name the farm implement drawn above
(b) Identify the parts labelled **L** and **M** above
(c) Give the function of the part labeled **M**
(d) State the field condition under which the implement can work better than the others (½mk)

7. (a) Explain the factors that a farmer should consider in ensuring fast and efficient cultivation by oxen
   (b) Outline the importance of lubrication system in a tractor
   (c) State the daily maintenance and servicing of a tractor

8. State the functions of the following parts of power transmission in a tractor:
   (i) Hydraulic system
   (ii) Draw bar
   (iii) Propeller shaft
   (ii) State **three** sources of tractor hire service

9. (i) What is a tractor hires services (1mk)
   (ii) State three sources of tractor hire service (1½mks)

10. The diagram below represents an assembled differential of a tractor. Use it to answer the questions that



(a) Name the parts labeled **A**, **B, C** and **D**
(b) State **two** functions of differential system of a tractor
(c) Give **two** reasons why wheel skidding of a tractor is not allowed

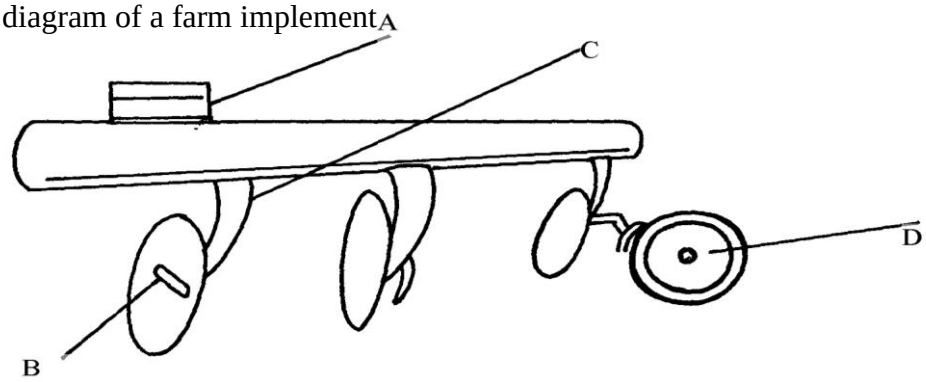
11. State **four** sources of power in the farm

12. Give the **four** strokes of a four stroke cycle tractor engine

13. State **four** factors which ensure efficient working by oxen in the farm

14. Mention **two** sources from which farmers can hire tractors

15. (a) Below is a diagram of a farm implement



(i) State the use of the implement shown above
(ii) Name the parts labeled **A, B, C**, and **D**
(iii) State **two** methods of increasing the depth of penetration of the implement

16. State **four** ways through which a farmer would ensure maximum power output from ploughing animals

17. State **three** advantages of a disc plough over mould board plough

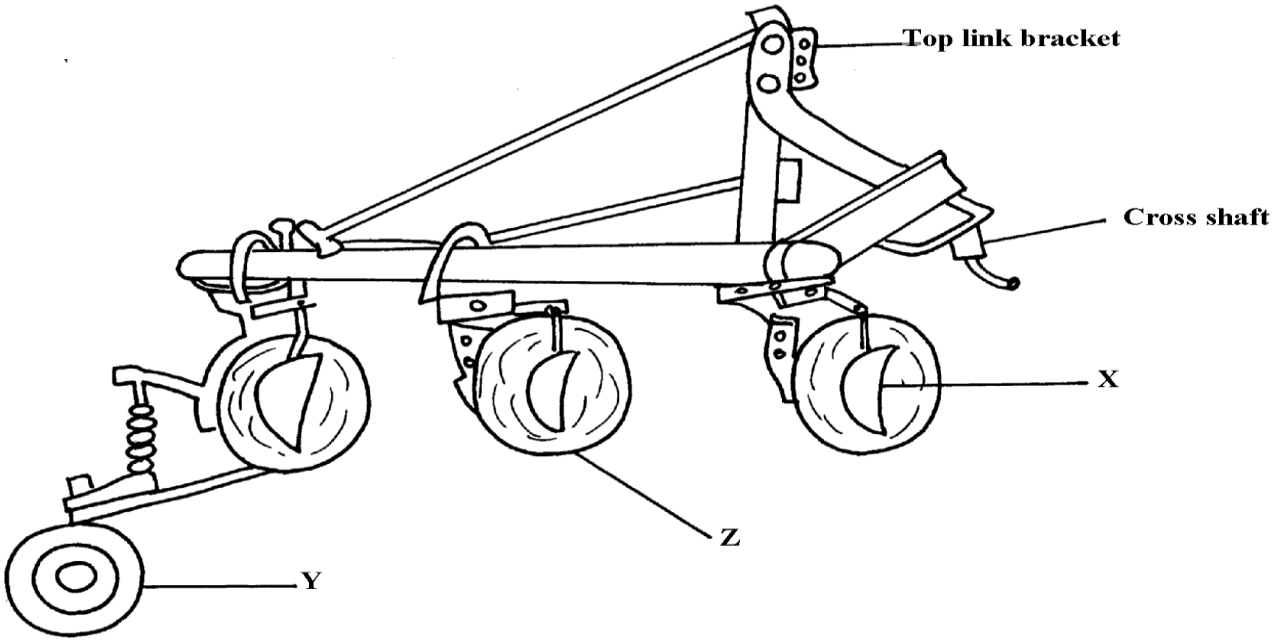
18. a) Explain the differences between petrol and chisel engine
b) Describe components of transmission system of a tractor

19. Name **four** systems of a tractor engine

20. Give **one** function of the clutch

21. State **two** adjustments that should be carried out on a tractor – mounted mould board plough in preparation for ploughing

22. The diagram below illustrates a farm implement. Study it and answer the questions



a) Identify the implement
b) Name the parts labeled **X, Y** and **Z**
c) State **three** maintenance practices that are carried out on a disc plough

23. a) Describe the operational differences of a disc plough and mould board plough
b) Explain **six** marketing problems affecting dairy farming in Kenya
c) State **four** reasons for culling a boar

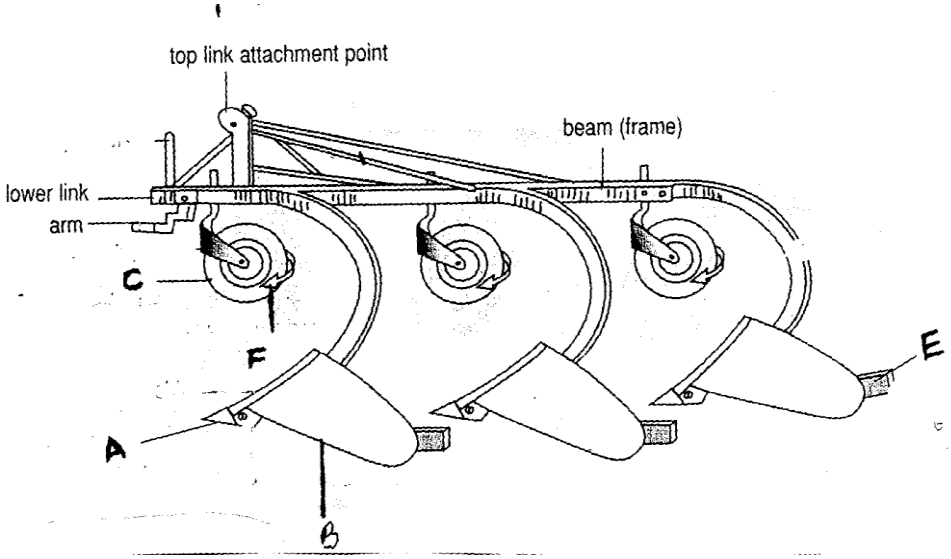
24. Name the role of the following parts of a mould board plough
a) Share .
b) Mould board
c) Land side....

25. a) State **five** maintenance practices of a mould board plough
b) Explain **five** structural and functional differences between the petrol and diesel engines
c) List **five** uses of farm fences

26. Give **two** uses of ox-drawn fine harrow

27. List **four** care and maintenance of a tractor battery

28. Study the diagram of a farm implement shown below and answer the questions that follow:



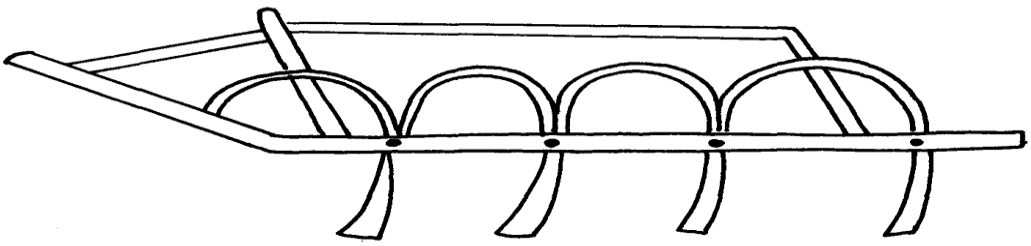
(a) Identify the farm implement illustrated above
(b) Label parts **A, B** and **C**
(c) Outline the functions of the parts labeled **E** and **F**
(d) Give **two** care and maintenance of the above implement

29. Outline **six** uses of live fences on the farm

30. List **two** possible causes of over heating in a tractor engine

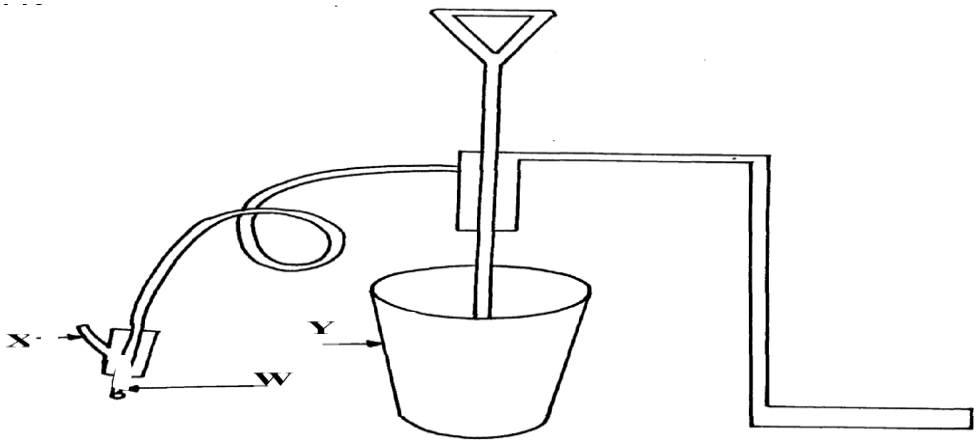
31. List **two** events occur during induction stroke in a four stroke engine

32. i) the diagram below shows a tractor drawn implement.



a) Name the implement
b) Give **two** uses of the implement above
c) State **three** maintenance practices carried out on the above implement.

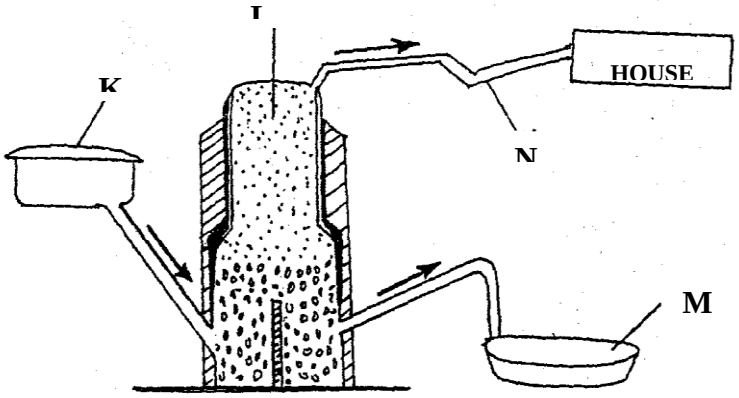
ii) Below is an illustration of a farm equipment. Study it and answer questions that follow



a) Identify the farm equipment illustrated above
b) What is the use of the equipment
c) Name the parts labelled **W, X** and **Y**
d) What is the functions of **Y** on the equipment

33. a) Explain the factors that influence the power output of farm animals
b) State the importance of farm fences

34. Study the illustration of a biogas digester plant and answer the questions that follow.



a) Name the major component of biogas that is trapped in part **L** above
b) Give the name of the material deposited in part labeled **M** and its use
c) What is the component of **K** in the biogas production
d) Give **thre**e disadvantages of biogas as a source of farm power

35. Other than hydro-electricity mention **two** sources of electrical energy which can be available for use in the farm

36. a) Describe the maintenance practices required on a tractor before it is put to daily use
b) Discuss the factors that influence the power output by a draught animal

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