F2 TOPICAL REVISION

AGRICULTURE

A SERIES OF TOPICAL REVISION AGRICULTURE QUESTIONS IN THIS CLASS.

An Intensive Analysis of Past KCSE Questions. Candidates are Hereby Advised to Keep attention to this Crucial Quick Revision Kit.

For Marking Scheme/Answers

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SOIL FERTILITY II (IN ORGANIC FERTILIZERS)

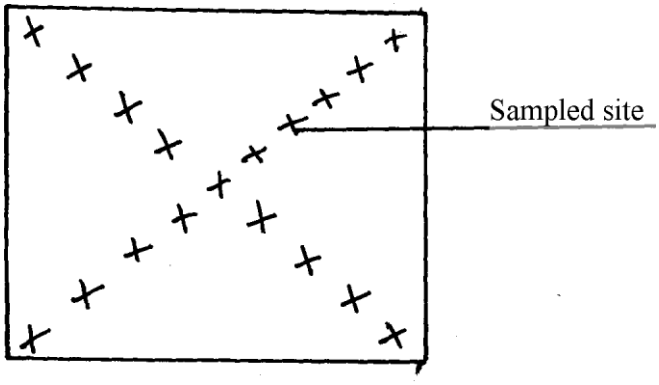
This topic entails the following;

- **Essentials elements required by cops**
- **Classification of essential elements**
- **Role o micro-nutrients**
- **Deficiency symptoms of macro-nutrients and micro-nutrients.**
- **Identification and classification of fertilizers.**
- **Soil sampling and testing methods of fertilizer application.**
- **Effect of soil acidity/alkalinity air crops**
- **Fertilizer rate calculations**

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:

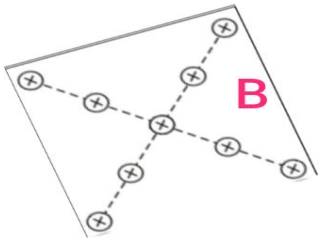
1. State **four** advantages of applying lime in clay soil
2. a) Give the form in which the following elements are absorbed by crops
   i) Sulphur
   ii) Nitrogen
   iii) Carbon
   iv) Magnesium
   b) List **three** effects of nitrogen to plants
3. Mr. Malombe of Shinyalu village prepared to top dress 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** pieces 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

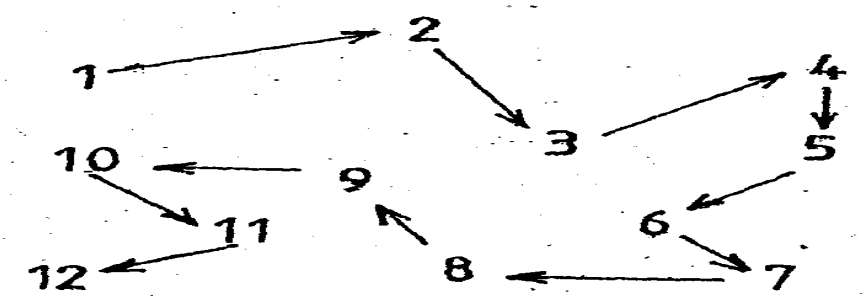




    i) Identify the methods illustrated
    ii) xx
    iii) State **three** importance of carrying out soil sampling and testing
18. (a) What is an incomplete compound fertilizer?

(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.**

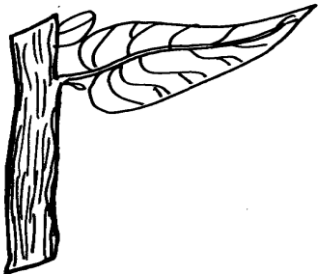
The following relevant questions and their answers in this topic will greatly help and motivate the user to comprehend and understand the required concepts and practices:

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

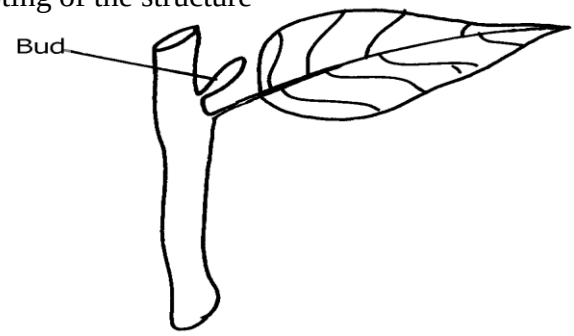
24. Study the illustration below of a tea vegetative material and answer the questions that follow



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. 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

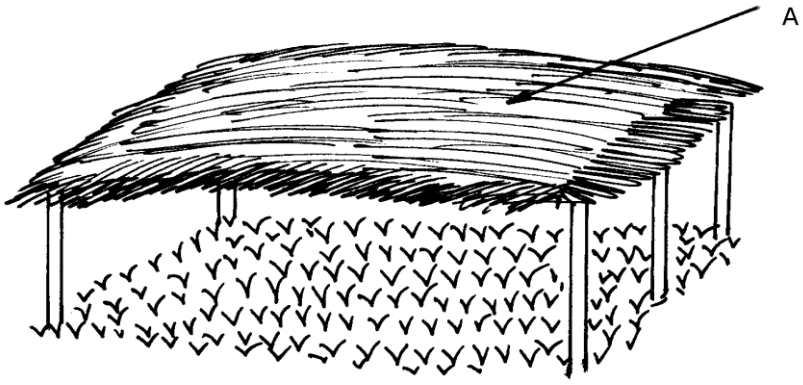
CROP PRODUCTION III
NURSERY MANAGEMENT PRACTICES

This topic entails the following:

- **A nursery bed**
- **A nursery bed and a seed bed**
- **Reasons of establishing nursery bed**
- **Suitable site for nursery bed**
- **Nursery bed preparation**
- **Nursery bed management practices**
- **Transplanting seedling crops from nursery bed**
- **Budding a seedling**
- **Grafting a seedling**
- **Reasons for budding, grafting and layering**
- **Tissue culture**
- **Damage caused by animals to a seedling and prevention**.

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. 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:

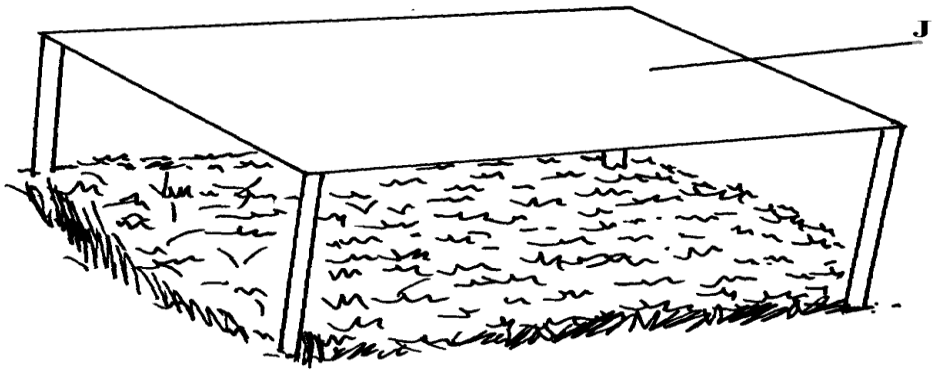


(a) Identify the structure above
(b) Give a reason for carrying out each of the following practices in the structure shown above
(i) Pricking out
(ii) Hardening off
(c) State three importance of the part labeled A in the above structure

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

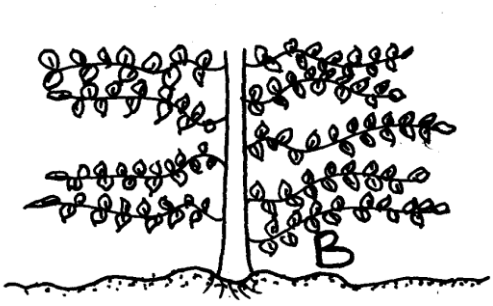
CROP PRODUCTION IV (FIELD MANAGEMENT PRACTICES)

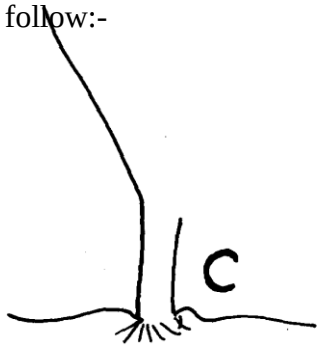
This topic entails the following:

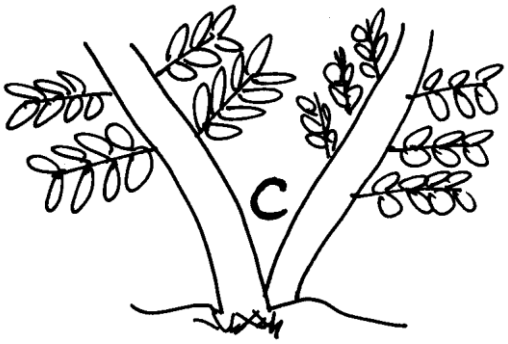
- **Crop rotation**
- **Reasons for crop rotations**
- **Crop rotation programme**
- **Terms used in crop farming**
- **Mulching**
- **Reasons for various field management practices**
- **Correct stage for harvesting crops**
- **Harvesting practices of various crops.**

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. 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:-

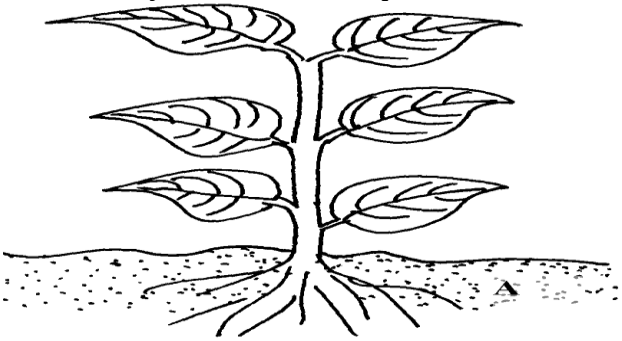


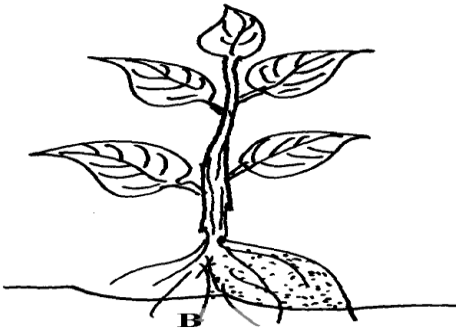




(a) Identify the system of pruning illustrated in **B**
(b) Identify the system of pruning in **C**
(c) Outline the procedure of how pruning in diagram **C** is carried out

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.

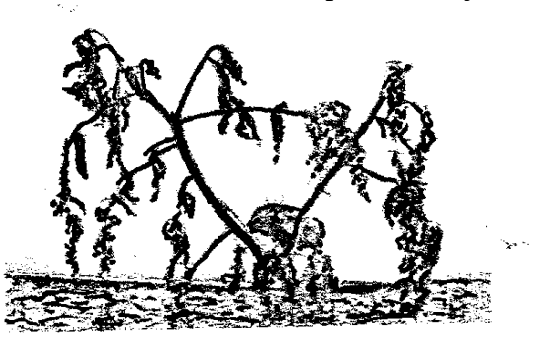
The following relevant questions and their answers in this topic will greatly motivate and help the user to comprehend and understand the required concepts and practices:

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)

This topic entails the following:

- Definition of Health and disease.
- Signs of sickness in animals livestock diseases
- Categories of livestock diseases
- Reasons for keeping livestock in good health
- Disease control practices
- Appropriate methods of handling livestock.

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. 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

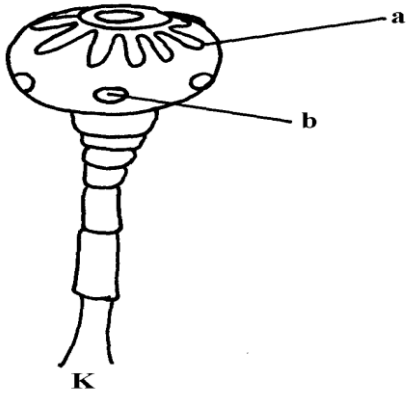
(LIVESTOCK HEALTH II
(LIVESTOCK PARASITES)

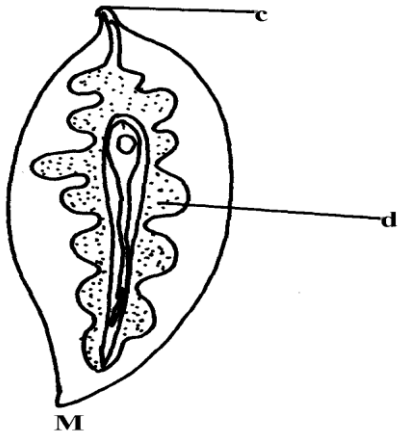
This topic entails the following:

- Host-parasite relationships
- Effects of parasites on livestock
- Life cycle of parasites
- Methods of parasite control in livestock
- Identify different parasites

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 **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)

This topic entails the following:

- Identification and classification of livestock feeds.
- Digestion and digestive systems of cattle, pigs and poultry
- Definition of terms used to express field values
- Preparation of balanced ration for various livestock
- Functions and deficiency symptoms of various nutritional elements.

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. 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

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