3.15  AGRICULTURE (443)

3.15.1 Agriculture Paper 1 (443/1)

SECTION A (30 marks)

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

1. State four reasons for intercropping. (2 marks)

2. Give four advantages of intensive farming. (2 marks)

3. Give four reasons why land should be prepared early in readiness for planting. (2 marks)

4. State four reasons for deep ploughing during land preparation. (2 marks)

5. State two conditions that must exist for a market to be purely competitive. (1 mark)

6. Distinguish between grading and standardization in agricultural marketing. (2 marks)

7. State four benefits of agroforestry to a maize crop. (2 marks)

8. Distinguish between intensive hedgerow and border planting forms of agroforestry. (2 marks)

9. What is meant by each of the following terms: (3 marks)
   (a) mixed cropping
   (b) monocropping  (C) intercropping.

10. State four advantages of timely planting. (2 marks)

11. State four advantages of row planting in crop production. (2 marks)

12. State four reasons why a nursery is important in crop production. (2 marks)

13. Distinguish between monopoly and monopsony. (2 marks)

14. Name the plant part used for vegetative propagation of each of the following plants: (12 mark)
   (a) cassava
   (b) sisal
   (c) pyrethrum
   (d) sweet potatoes.

15. State four characteristics of a good vegetable seedling. (2 marks)
SECTION (20 marks)

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

16 The photograph below illustrates a method of irrigation.

(a) Identify the method of irrigation illustrated above. (1 mark)

(b) State **two** maintenance practices that are carried out on the equipment used in the method illustrated above. (2 marks)

(c) Give **one** advantage drip irrigation has over the method of irrigation illustrated above in crop disease control. (1 mark)

17 The table below shows a format of a farm record.

<table>
<thead>
<tr>
<th>Date</th>
<th>Disease Symptom</th>
<th>Livestock affected</th>
<th>Drugs used</th>
<th>Cost of treatment</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Name the farm record illustrated above. (1 mark)

(b) Give **two** uses of the farm record shown above. (2 marks)

18 The table below represents an account in a financial book of a poultry farmer.

<table>
<thead>
<tr>
<th>Date</th>
<th>Particulars</th>
<th>Folio</th>
<th>Amount</th>
<th>Date</th>
<th>Particulars</th>
<th>Folio</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(a) Identify the financial book. (1 mark)

(b) On 10th January 2011, the poultry farmer bought 5 bags of layers mash worth Ksh. 10 000/- and sold 100 trays of eggs for Ksh. 20 000/- on 10 January 2011. Enter these transactions in the account above. (3 marks)
19 The following illustrations show different production function curves in agricultural economics. Study them and answer the questions that follow.

(a) Identify the production function curves labelled A and B. (2 marks)

A ..............................................................................................................................

B ..............................................................................................................................

(b) What does the law derived from the production function labelled C state? (1 mark)

(c) (i) Which one of the three production function curves is rare in Agriculture? (1 mark)

(ii) Give a reason for your answer in (c)(i) above. (1 mark)

20 The following is a list of plant nutrients; Copper, Calcium, Nitrogen, Molybdenum, Zinc, Phosphorus, Carbon, Sulphur, Iron and Magnesium.

Which of the above plant nutrients are:

(a) macro-nutrients (1 mark)

(b) micro-nutrients (1 mark)

(c) fertilizer elements (1 mark)

(d) liming elements. (1 mark)

SECTION C (40 marks)

Answer any two questions from this section in the spaces provided after question 23.

21 (a) Explain eight cultural methods of soil and water conservation. (8 marks)

(b) Explain four ways in which:

(i) HIV/AIDS limits agricultural production (4 marks)
(ii) government policy improves agricultural production  

(3 marks)

(iii) low level of education and technology influences agriculture.  

(4 marks)

22  

(a) Explain **seven** physical methods of pest control.  

(7 marks)

(b) Explain **eight** factors that contribute to the competitive ability of weeds.  

(8 marks)

(c) Describe the harvesting of coffee.  

(5 marks)

23  

(a) Describe the preparation and handling of stem cuttings when planting napier grass.  

(5 marks)

(b) Describe the production of onions under the following sub-headings:

(i) seedbed preparation  

(3 marks)

(ii) field management  

(4 marks)

(iii) harvesting.  

(3 marks)

(c) Give **five** reasons why land consolidation should be encouraged in Kenya.  

(5 marks)
3.15.2 Agriculture Paper 2 (443/2)

SECTION A (30 marks)

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

1. State four ways of controlling lice in poultry. (2 marks)
2. State three signs of heat observed in rabbits. (1½ marks)
3. Name three methods of extracting honey from combs. (1½ marks)
4. State three signs of broodiness in a hen. (1½ marks)
5. Give the main reason for each of the following in dairy farming: (1½ marks)
   (a) milking quickly and evenly;
   (b) milking at regular times;
   (c) complete milking.
6. State four factors that stimulate milk let-down in a lactating cow. (2 marks)
7. State four signs of infestation by external parasites in goats. (2 marks)
8. Give four disadvantages of inbreeding in livestock production. (2 marks)
9. State four advantages of fish farming in Kenya. (2 marks)
10. Give two reasons for castration in piglets. (1 mark)
11. Name two practices that are carried out on eggs in preparation for marketing. (1 mark)
12. State two precautions that should be observed when shearing sheep to ensure production of high quality wool. (1 mark)
13. Name four parts of a farm building that can be reinforced using concrete. (2 marks)
14. State four factors that can affect digestibility of a feedstuff in livestock. (2 marks)
15. State two causes of soft shelled eggs. (1 mark)
16. Give four characteristics of a good site for a fish pond. (2 marks)
17. State four disadvantages of fold system in poultry rearing. (2 marks)
18. Name four methods of docking in sheep rearing. (2 marks)
SECTION B (20 marks)

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

19. Below are photographs showing parts of a ruminant stomach. Study them and answer the questions that follow.

(a) Identify the parts labelled A and B (2 marks)

A..............................................................................................................................................

B..............................................................................................................................................

(b) State **one** function of the part labelled

A.............................................................................................................................................. (1 mark)

C.............................................................................................................................................. (1 mark)

(c) Name **one** enzyme that is produced in the part labelled D. (1 mark)
20 Below is a diagram illustrating the reproductive system of a bull. Study it and answer the questions that follow.

![Diagram of bull's reproductive system]

(a) Identify the parts labelled

K.................................................................................................................. (1 mark)

L.................................................................................................................. (1 mark)

(b) State the function of the part labelled

Epididymis .................................................................................................... (1 mark)

Seminal vesicles ............................................................................................. (1 mark)

21 Below is a photograph showing an egg being candled. Study it and answer the questions that follow.

![Photograph of candled egg]

(a) Why is candling important in poultry farming? (1 mark)
(b) What changes will be observed on the same egg if it was candled on the 18th day of incubation? (2 marks)

22 The following is an illustration of a handsaw. Study it carefully and answer the questions that follow.

(a) Name the parts labelled

F ................................................................. (1 mark)

G ................................................................. (1 mark)

(b) Explain three maintenance practices that should be carried out on the part labelled H. (3 marks)

23 Below is a diagram illustrating a farm implement. Study it and answer the questions that follow.

(a) Identify the implement illustrated above. (1 mark)

(b) State the use of the:

(i) implement on the farm; (1 mark)

(ii) part of the implement labelled J. (1 mark)
SECTION C (40 marks)

Answer any **TWO** questions from this section in the spaces provided after question 26.

24  
(a) Give five reasons for keeping livestock healthy.  
(b) Describe the symptoms of roundworm infestation in livestock.  
(c) Describe the control measures for cannibalism in layers.

25  
(a) Describe the body conformation features of a dairy heifer.  
(b) State the disadvantages of using live fences on a farm.  
(c) Describe how a four-stroke cycle petrol engine works.

26  
(a) Describe the disease control routine management practices in calf rearing.  
(b) Describe contagious abortion (Brucellosis) disease under the following sub-headings:
   (i) causal organism;  
   (ii) animals affected;  
   (iii) symptoms;  
   (iv) control measures.