

29.15 AGRICULTURE (443)

29.15.1 Agriculture Paper 1 (443/1)



MANYAM FRANCHISE
Discover! Learn! Apply

SECTION A (30 marks)

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

- 1 Give **two** disadvantages of intensive system of farming. (1 mark)
- 2 List **four** methods of farming. (2 marks)
- 3 Give the meaning of the following terms:
 - (a) nitrogen fixation into the soil; (1 mark)
 - (b) phosphorus fixation in loss of soil fertility. (1 mark)
- 4 Give **four** reasons for keeping livestock health records on the farm. (2 marks)
- 5 Explain the relationship between scarcity and choice as used in agricultural economics. (2 marks)
- 6 State **two** reasons for land fragmentation in Kenya. (1 mark)
- 7 Give **four** advantages of individual owner operator tenure system as practised in Kenya. (2 marks)
- 8 State **four** features that should be considered when choosing water pipes for use on the farm. (2 marks)
- 9 Give **four** reasons for treating water for use on the farm. (2 marks)
- 10 Name **four** statutory boards that are involved in the marketing of crop produce in Kenya. (2 marks)
- 11 State **four** marketing functions of Kenya Co-operative Creameries (K.C.C.). (2 marks)
- 12 Give **two** reasons for carrying out each of the following operations in land preparation:
 - (a) rolling; (1 mark)
 - (b) levelling. (1 mark)
- 13 Name **three** recommended practices that should be carried out when clearing the bush during land preparation. (1½ marks)
- 14 State **five** advantages of zero grazing. (2½ marks)
- 15 Give **four** factors that would determine the stage at which a crop is harvested. (2 marks)
- 16 Name **two** classes of weeds on the basis of each of the following:
 - (a) growth cycle; (1 mark)

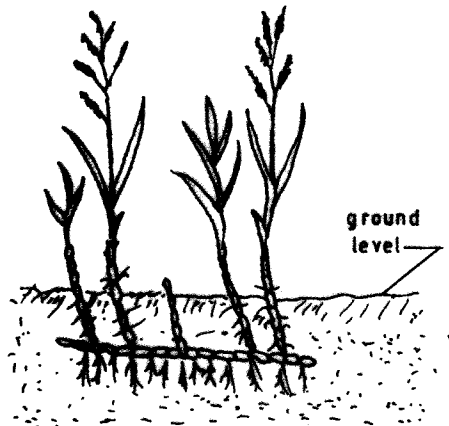
(b) plant morphology.

(1 mark)

SECTION B (20 marks)

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

- 17 Below is a diagram of a weed. Study the diagram carefully and answer the questions that follow.



- (a) Identify the weed illustrated above. (½ mark)
- (b) Why is the weed illustrated above difficult to control? (1 mark)
- (c) State **four** ways in which the weed can be controlled in a field of maize. (2 marks)

- 18 The table below shows pH values of different soil samples. Study it and answer the questions that follow.

Soil Sample	pH value
S ₁	3
S ₂	4
S ₃	5
S ₄	6
S ₅	7
S ₆	8
S ₇	9
S ₈	10

- (a) Which soil sample has the highest acidity? (½ mark)
- (b) State **two** ways in which the pH value of sample S₈ can be lowered. (1 mark)
- (c) Which of the above soil samples is suitable for growing tea? (½ mark)
- 19 Explain how agroforestry tree seeds should be prepared after collection in readiness for planting. (4 marks)

- 20 (a) The diagrams below represent two ways in which a crop was pruned. Study them carefully and answer the questions that follow.



- (i) Which diagram represents the correct way of pruning? (½ mark)
- (ii) Give a reason for your answer in (i) above. (1 mark)
- (b) State two ways in which pruning assists in controlling crop diseases. (1 mark)

- 21 On 1st January 2009, Kaburu Farm started farm operations with Ksh 30,000 cash. During the month, the farm made the following transactions. Study the transactions and prepare a cash analysis for Kaburu Farm for the month of January. (5 ½ marks)

Date	Transaction	Amount (Ksh)
05/01/09	Livestock sales	80,000
08/01/09	Crop sales	50,000
15/01/09	Bought seed for planting	7,500
20/01/09	Paid K.F.A. for fertilizer	16,400
25/01/09	Bought livestock feeds	50,000
30/01/09	Paid wages for planting & weeding	56,000
31/01/09	Received cash from K.C.C. for milk delivery	120,000
31/01/09	Paid transport charges for milk delivery	9,000

- 22 (a) What do the figures 18:46:10 on a fertilizer bag represent? (1½ marks)
- (b) Calculate the quantity of filler materials in the fertilizer in (a) above. (1 mark)

SECTION C (40 marks)

Answer any two questions in this section in the spaces provided after question 25.

- 23** (a) Explain **eight** factors that can encourage soil erosion. (8 marks)
- (b) Describe the seven management practices that should be carried out on a vegetable nursery after sowing seeds until the seedlings are ready for transplanting. (7 marks)
- (c) State **five** soil factors that should be considered when selecting a crop to grow in an area. (5 marks)
- 24** (a) Outline **five** ways in which high temperature affects agricultural production in Kenya. (5 marks)
- (b) (i) Explain **four** precautions that should be observed when harvesting cotton. (4 marks)
- (ii) Describe the harvesting of sugar cane. (3 marks)
- (c) Explain **eight** factors that should be considered when planning to set up a farm business. (8 marks)
- 25** (a) Explain **six** physical methods that can be used to control crop pests on the farm. (6 marks)
- (b) Describe the production of bulb onions under the following sub-headings:
- (i) field management; (4 marks)
- (ii) harvesting. (3 marks)
- (c) Explain **seven** factors that influence seed rates in crop production. (7 marks)

SECTION A (30 marks)

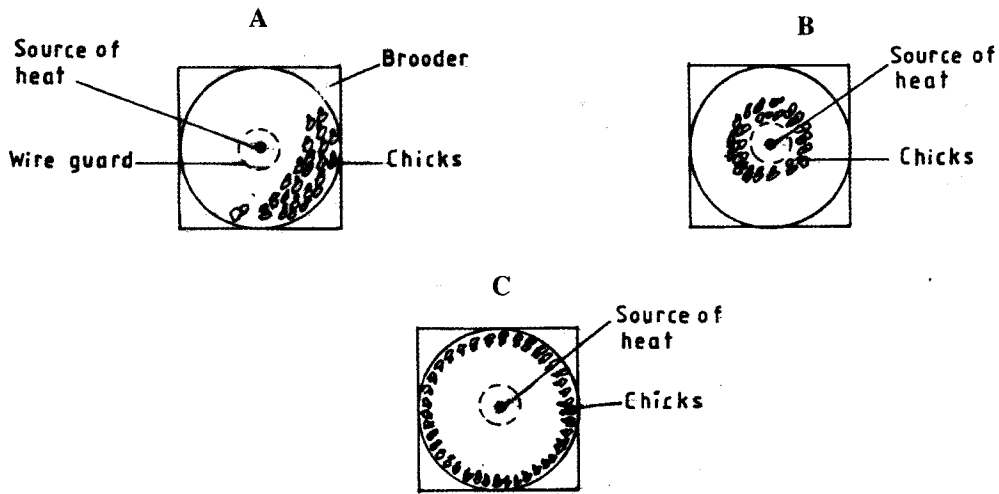
Answer *all* the questions in this section in the spaces provided.

- 1 Name the causal agent of anaplasmosis disease in cattle. (½ mark)
- 2 List **four** materials that can be used in constructing a Kenya Top Bar Hive. (2 marks)
- 3 (a) Name **two** breeds of dairy cattle that originated from the Channel Islands. (1 mark)
(b) Give the distinguishing colour for each of the following breeds of livestock:
 - (i) chinchilla rabbit; (½ mark)
 - (ii) toggenburg goat. (½ mark)
- 4 State **four** reasons for castration in pig production. (2 marks)
- 5 State **four** characteristics of roughage livestock feeds. (2 marks)
- 6 State **two** functions of the crop in poultry digestive system. (1 mark)
- 7 State **four** roles of worker bees in a colony. (2 marks)
- 8 Give **four** reasons for controlling livestock diseases. (2 marks)
- 9 State **two** control measures for fowl pox disease in poultry. (1 mark)
- 10 State **one** function for each of the following:
 - (a) shovel; (½ mark)
 - (b) strip cup. (½ mark)
- 11 Give **three** reasons for carrying out maintenance practices on a mower. (1½ marks)
- 12 Give **three** limitations of using solar power on the farm. (1½ marks)
- 13 Why is it important to have a thermostat on a cooling system of a tractor engine? (1 mark)
- 14 Give **two** advantages of using a disc plough over a mouldboard plough in primary cultivation. (1 mark)
- 15 Name **four** tools that are used when laying concrete blocks during construction of a wall. (2 marks)
- 16 Why is it necessary to have guard rails in a farrowing pen? (1 mark)
- 17 Give **two** reasons for having a footbath in a cattle dip. (1 mark)
- 18 Distinguish between the following practices as used in livestock production:
 - (a) crutching and ringing in sheep management; (2 marks)
 - (b) cropping and harvesting in fish farming. (2 marks)
- 19 Give **three** ways in which infectious diseases can spread from one livestock to another within a farm. (1½ marks)

SECTION B (20 marks)

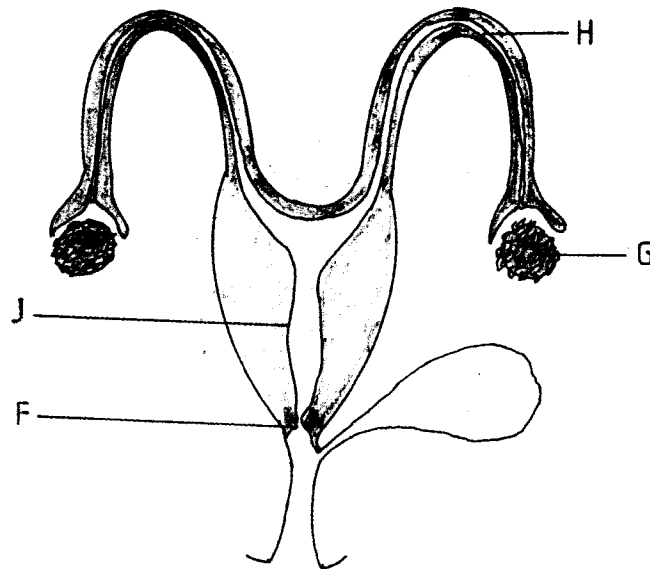
Answer *all* the questions in this section in the spaces provided.

- 20 The following illustrations show the behaviour of chicks in a brooder. Study them carefully and answer the questions that follow.



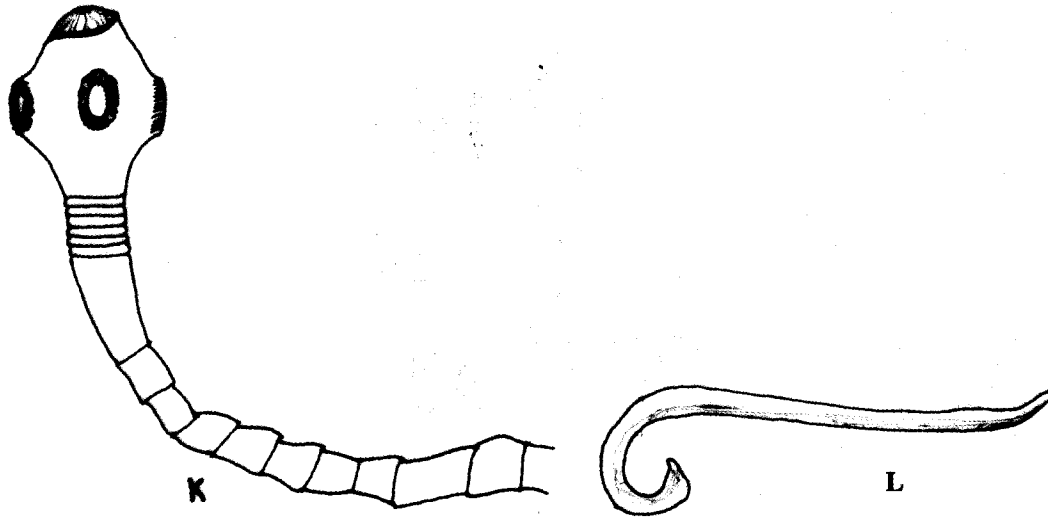
- (a) Explain the cause of behaviour observed in chicks for each of the illustrations labelled A, B and C. (3 marks)
- (b) Give a reason for making the brooder wall round in shape. (1 mark)

- 21 The diagram below shows the reproductive system of a cow. Study it carefully and answer the questions that follow.

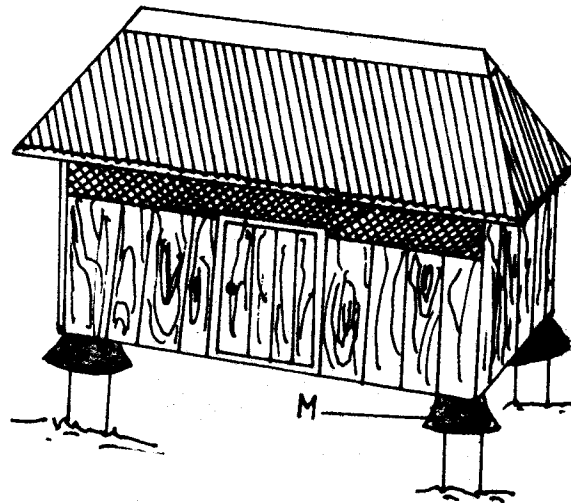


- (a) Name the parts labelled F and H.
- (b) Give **two** functions of the part labelled G. (2 marks)
- (c) Give the role of the part labelled J. (1 mark)

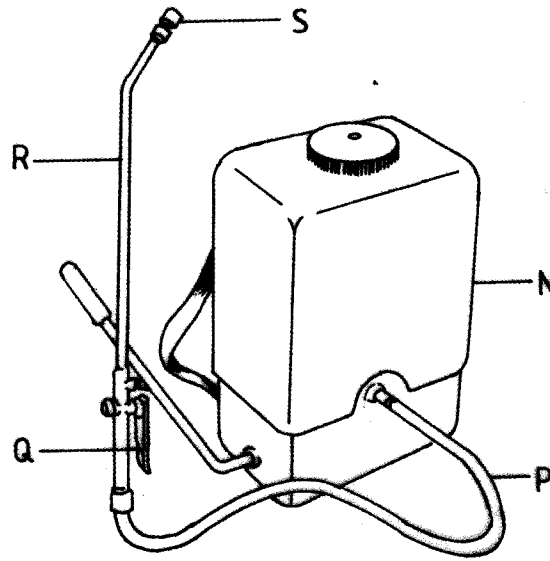
- 22 Below are diagrams of internal parasites. Study them carefully and answer the questions that follow.



- (a) Identify the parasites labelled **K** and **L**.
 (b) Name the developmental stage of the parasite labelled **K** in cattle muscles. (½ mark)
 (c) Outline the procedure of handling a heifer when administering a liquid deworming drug to control the parasites illustrated above. (2½ marks)
- 23 Below is a diagram of a farm structure for storing grains. Study it carefully and answer the questions that follow.



- (a) Identify the farm structure illustrated above. (½ mark)
 (b) State the function of the part labelled **M**. (½ mark)
 (c) State **two** maintenance practices that should be carried out on the farm structure illustrated above in readiness for grain storage. (1 mark)
- 24 Below is a diagram of a knapsack sprayer. Study it carefully and answer the questions that follow.



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

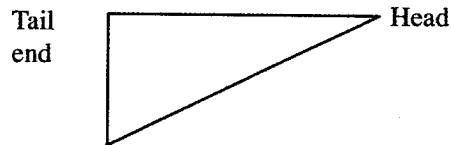
- N
- P
- Q
- R

(2 marks)

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

(1 mark)

25 The diagram below illustrates the general shape of a cattle breed. Study it carefully and answer the questions that follow.



(a) Identify the type of breed illustrated by the above shape.

(½ mark)

(b) Give an example of a breed in (a) above.

(½ mark)

(c) State **four** physical characteristics of the type of breed identified in (a) above.

(2 marks)

SECTION C (40 marks)

Answer any two questions from this section in the spaces provided after question 28.

- 26** (a) Outline **five** advantages of artificial insemination in cattle management. (5 marks)
- (b) Describe **ten** signs of trypanosomiasis (Nagana) disease in livestock. (10 marks)
- (c) Explain **five** functions of water in nutrition. (5 marks)
- 27** (a) State the function of any **six** parts of a zero grazing unit in dairy farming. (6 marks)
- (b) Explain how the power transmitted from a tractor engine is made available for use on the farm under the following subheadings:
- (i) propeller shaft; (2 marks)
- (ii) power take off (P.T.O) shaft; (2 marks)
- (iii) hydraulic system. (2 marks)
- (c) Explain **eight** ways in which ticks can be controlled on a livestock farm. (8 marks)
- 28** (a) Describe **ten** physical characteristics a poultry farmer would use to identify poor layers from a flock of hens. (10 marks)
- (b) (i) Outline **three** characteristics of clean milk. (3 marks)
- (ii) Explain **seven** factors that affect milk composition in dairy farming. (7 marks)