

KANGEMA/MATHIOYA FORM FOUR JOINT EVALUATION

Kenya Certificate of Secondary Education

AGRICULTURE

Paper - 443/1

July / August 2016**SECTION A (30 marks)**Answer ALL questions in this section on the spaces provided.

1. a) Give two disadvantages of intensive system of farming. (1 mark)
b) List two methods of farming. (1 mark)
2. Name any two methods that can be used to detect nutrient deficiency in crops. (1 mark)
3. Name four methods used in harvesting trees in agroforestry. (2 marks)
4. Outline two ways used to control overheating in the process of silage making. (1 mark)
5. Name four types of financial books a farmer should keep. (2 marks)
6. State two ways in which a farmer would benefit by having a title deed. (1 mark)
7. State two factors that may lead to a farmer using high seed rate for a given crop. (2 marks)
8. Outline four factors considered when designing a crop rotation programme. (2 marks)
9. Outline four reasons why kale seedlings should be raised in a nursery bed before transplanting. (2 marks)
10. List any four kinds of information a farmer should enter in the health records of livestock. (2 marks)
11. Distinguish between settlement and resettlement. (2 marks)
12. State **four** characteristics of nitrogenous fertilizers. (2 marks)
13. List four methods that can be used to reclaim water-logged land. (2 marks)
14. List four different categories of vegetables. (2 marks)
15. Give four advantages of using certified seeds in crop propagation. (2 marks)
16. Name three different types of layering. (1½ marks)
17. State three characteristics of good green-manuring crop. (1½ marks)

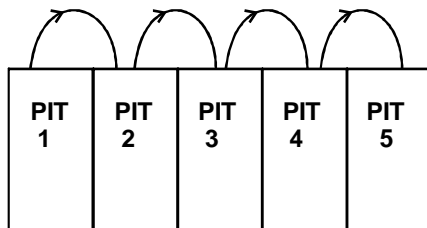
SECTION B (20 marks)

18. The diagram below shows a method of bringing tea into bearing. Study it carefully and use it to answer the questions that follow.

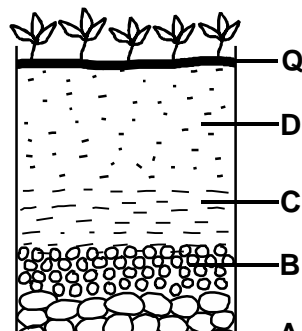


- a) Identify the method shown in the diagram above. (1 mark)
- b) Why is it necessary to prune a young tea plant as illustrated in the diagram above? (1 mark)
- c) Outline the procedure followed when using the pruning method shown above. (3 marks)

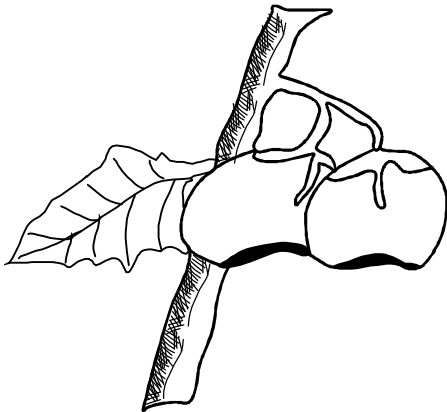
19. The following diagram shows a method of compost manure preparation.



- a) Identify the method. (1 mark)
 - b) Give two factors that should be considered when siting the compost pit. (2 marks)
 - c) Maize requires 120kg/ha of phosphorous pentoxide (P_2O_5). How much of the compound fertilizer 20 : 20 : 10 would be applied to 0.4 hectares of land to achieve this rate. (2 marks)
20. Study the diagram below and answer the questions that follow.



- a) Identify the above structure. (1 mark)
 b) Name the parts labelled A,B, C and D (2 marks)
 c) Give the name of the layer labelled Q. (1 mark)
 d) State are characteristic of layer D. (1 mark)
21. The diagram below shows a physiological condition in tomatoes. Use it to answer the questions that follow.



- a) Identify the disease condition. (1 mark)
 b) Outline two causes of the condition named in (a) above. (2 marks)
 c) Give two ways of controlling the diseases. (2 marks)

SECTION C (40 marks)

Answer any two questions from this section. All questions carry equal marks.

22. a) Explain four farming practices that maintain good soil structure (4 marks)
 b) Explain four advantages of minimum tillage in crop production. (4 marks)
 c) Describe seven safety precautions that should be taken when using herbicides to control weeds. (7 marks)
 d) Outline five harmful effects of crop pests. (5 marks)
23. a) Complete the table below that shows a hypothetical relationship between fertilizer input and maize yields, the cost of production and returns from maize. The cost of fertilizer is Kshs 750 per 50kg bag and the price of maize is Kshs 1200/= per 90kg bag. (8 marks)

| CAN FERTILIZER (50 kg) | YIELD OF MAIZE (90kg/bag) | TOTAL COST (TC) Kshs | MARGINAL COST MC Ksh | TOTAL REVENUE | MARGINAL REVENUE | NET REVENUE |
|---------------------------|------------------------------|-------------------------|-------------------------|------------------|---------------------|-------------|
| 1 | 35 | 750 | | | | |
| 2 | 53 | 1,500 | 750 | 63,600 | 21,600 | |
| 3 | 68 | | 750 | 81,600 | | 79,350 |
| 4 | 70 | 3,000 | 750 | | | |
| 5 | 71 | 3,750 | 750 | | | 81,450 |
| 6 | 69 | 4,500 | 750 | | -2400 | 78,300 |
| 7 | 68 | 5,250 | 750 | | | |
| 8 | 66 | 6,000 | 750 | 79,200 | | |

- b) i) Using the table above, what is the point of profit maximization. (1 mark)
 ii) Give a reason for your answer in b(i) above. (1 mark)
- c) Describe the raising of a maize crop grown for grain production under the following subheadings
 i) Ecological requirements. (2 marks)
 ii) Seedbed preparation. (2 marks)
 iii) Planting (4 marks)
 iv) Harvesting (2 marks)
24. a) Describe the establishment and management of pasture crop stand up to grazing time. (5 marks)
 b) Describe the cultural methods used in controlling crop diseases. (5 marks)
 c) Outline five ways in which a farmer would improve the productivity of farm labour. (5 marks)
 d) Describe the various agencies and institutions involved in marketing of agricultural produce. (5 marks)

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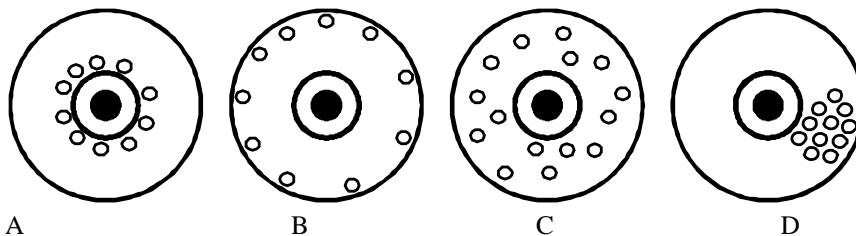
Paper - 443/1

July / August 2016**SECTION A (30 marks)**Answer ALL questions in this section on the spaces provided.

1. Give the normal composition of clean milk. (2½ marks)
2. State four harmful effects of ticks on livestock. (2 marks)
3. Differentiate between mothering ability and prolificacy in livestock breeding. (1 mark)
4. Why is it necessary to vaccinate livestock? (1 mark)
5. Give use of spookshave on the farm. (1 mark)
6. State four reasons why livestock should be weighed at weaning stage. (2 marks)
7. Give two uses of a footbath in a plunge dip. (1 mark)
8. List four exotic breeds of goats which are suitable for milk production. (2 marks)
9. List four livestock management practices that can be carried out in a crush. (2 marks)
10. State two chemical methods of dehorning calves. (1 mark)
11. a) State any two reasons why a farmer should use concrete floors for dairy sheds. (1 mark)
b) Give two reasons why the walls of a dairy shed should be white washed instead of being painted with oil paint. (1 mark)
12. State three reasons why harvesting honey at night should be discouraged. (1½ marks)
13. a) What is a notifiable disease? (1 mark)
b) Name two cattle disease controlled by use of one vaccine. (1 mark)
14. State any four requirements of a good brooder. (2 marks)
15. Outline four factors that determine the nutritional requirements of an animal. (2 marks)
16. What do you understand by the term 'psciculture'? (1 mark)
17. Name two forms of pastoralism. (1 mark)
18. Name a set of tools used for the following farm operations
a) Controlling bloat in cattle. (1 mark)
b) Restraining an animal during an agricultural show exhibition. (1 mark)
c) Name two dual purpose cattle breeds. (1 mark)

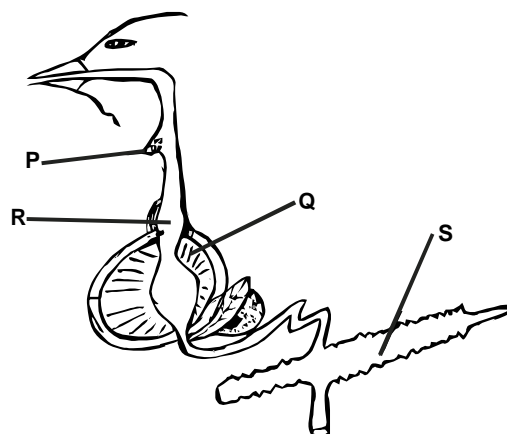
SECTION B (20marks)Answer ALL questions in this section

19. The following illustrations show the behaviour of chicks at different temperature in a brooder.



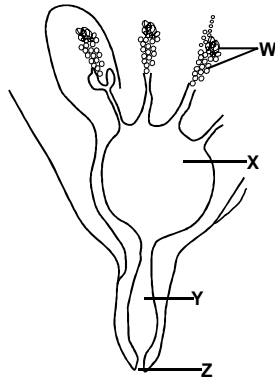
Explain the temperature condition in each of the four diagrams. (4 marks)

20. Describe the procedure followed when collecting semen using an artificial vagina. (5 marks)
21. Study the diagram below of the digestive system of a chicken.



- a) Identify the parts labelled P, Q, R and S. (2 marks)

22. The diagram below shows the structure of the udder of a cow.



- a) Label the parts labelled W, X, Y and Z. (2 marks)
 b) What is milk let-down (1 mark)
 c) Name two hormones that control milk let-down in a dairy cow. (1 mark)
 d) What is dry cow therapy? (1 mark)

SECTION C

Answer any two questions in this section.

23. a) What is a green house? (1 mark)
 b) Name four materials used in the construction of a greenhouse. (2 marks)
 c) Outline six components of a zero grazing unit. (6 marks)
 d) Outline five benefits of using biogas as a source of power on the farm. (5 marks)
 e) State three limitations of using hydroelectric power on the farm. (3 marks)
 f) State three methods of controlling roundworms (*Ascaris* sp) in livestock. (3 marks)
24. a) Identify the routine management practices carried out on livestock when raising young stock in dairy production. (8 marks)
 b) Explain the different methods used to stimulate milk letdown in a lactating cow when milking (6 marks)
 c) Explain three routine livestock feeding practices carried out when rearing livestock. (6 marks)
25. a) Discuss contagious abortion (brucellosis) under the following subheading. (1 mark)
 i) Animal species attacked (2 marks)
 ii) Mode transmission (3 marks)
 iii) Symptoms (3 marks)
 iv) Control measures (2 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 (PTO) shaft. (2 marks)
 iii) Hydraulic system. (2 marks)
- c) Explain six ways in which ticks can be controlled on a livestock farm. (6 marks)