29.14 AGRICULTURE (443)

29.14.1 Agriculture Paper 1 (443/1)

SECTION A (30 marks)

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

1 List **three** methods of treating water for use on the farm. (1½ marks)

2 Give **two** examples for each of the following categories of water pipes:

(a) Metal pipes (1 mark)

(b) Hose pipes (1 mark)

3 State **four** disadvantages of communal land tenure system. (2 marks)

4 List **four** sites on which agroforestry trees can be established on a farm. (2 marks)

5 State **four** financial documents that should be kept on a farm. (2 marks)

6 Give **two** ways in which check dams control soil erosion. (1 mark)

7 List **two** methods of budding that are used in propagation of plants. (1 marks)

8 Give **two** reasons for locating a nursery bed at a well sheltered place. (1 marks)

9 State **four** ways in which burning of vegetation may lead to loss of soil fertility. (2 marks)

10 Give **two** forms in which nitrogen is absorbed from the soil by plants. (1 mark)

11 Why is it necessary to allow freshly cut sorghum (Columbus grass) to wilt before feeding it to livestock? (1 mark)

12 Give **two** roles of soil micro-organisms that are beneficial to crops. (1 mark)

13 Distinguish between the terms hybrid and composite as used in maize breeding. (1 mark)

14 Give **three** reasons for growing crops under optimum temperature conditions. (1½ marks)

15 State **two** harmful effects of strong wind on crop production. (1 mark)

16 Give **two** ways in which cover crops help to conserve water in the soil. (1 mark)

17 Give a reason for carrying out each of the following management practices on a tree nursery:

(a) Pricking out (1 mark)

(b) Root trimming (1 mark)

18 Outline **two** ways of controlling damping off disease on vegetable seedlings in a nursery. (1 mark)

19 State **four** effects of pests with both piercing and sucking mouth parts on crops. (2 marks)

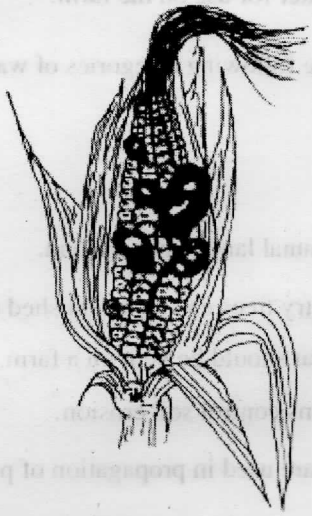
20 Name **four** natural factors that may influence soil erosion. (2 marks)

21 Give **two** conditions in agricultural production under which opportunity cost is zero. (1 mark)

SECTION B (20 marks)

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

22 The diagram below illustrates a maize cob attacked by a disease. Study it carefully and answer the questions that follow.

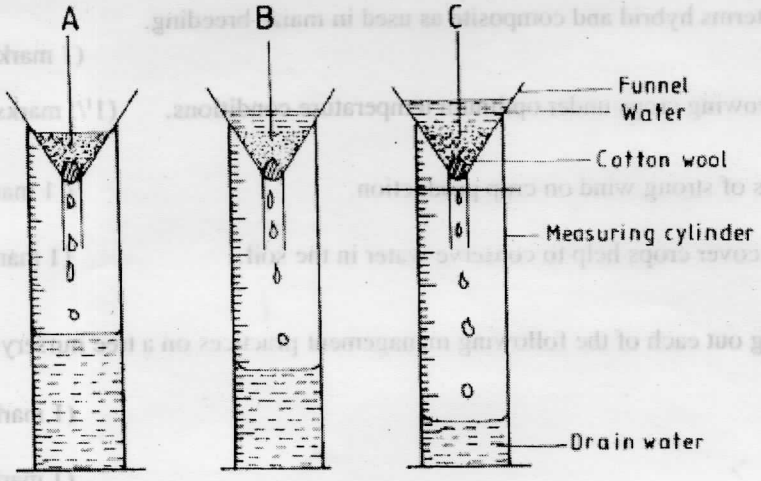


(a) Identify the disease. (1 mark)

(b) Apart from maize, give **two** other crops that may be attacked by the disease. (1 mark)

(c) State **two** methods of controlling the disease. (2 marks)

23 The diagram below illustrates an experiment on soil. Study it carefully and answer the questions that follow.

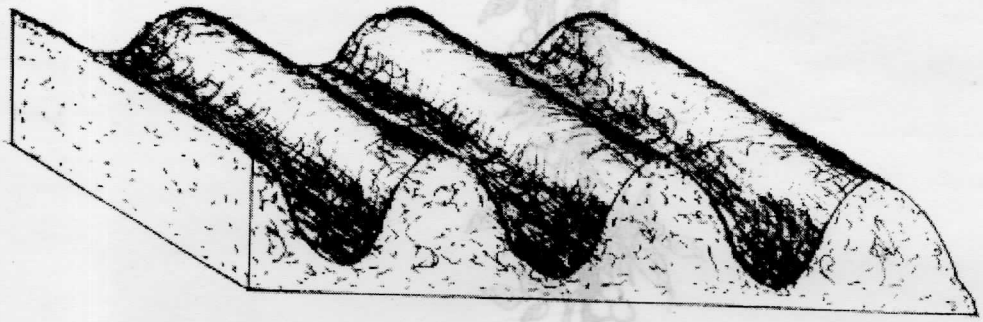


(a) State the aim of the experiment. (1 mark)

(b) If the volume of water illustrated in the measuring cylinders was observed after one hour, identify the soil samples labelled A and B.

(c) State **two** ways in which the soil structure of the soil sample labelled **C** above can be improved. (2 marks)

24 The diagram below illustrates a final seedbed after a tertiary operation done during land preparation. Study it carefully and answer the questions that follow.



(a) Name the tertiary operation carried out on the seedbed. (½ mark)

(b) Describe how the tertiary operation named in (a) above is carried out. (1 ½ marks)

(c) Give **two** advantages of planting crops on the final seedbed illustrated above. (2 marks)

25 What is the function of each of the following ingredients in the preparation of compost manure?

(a) Wood ash (1 mark)

(b) Top soil (1 mark)

26 Name the deficient nutrient element in plants showing the following symptoms:

(a) Stunted growth, die back of plant tips, leaves roll up and chlorosis along margins of younger leaves (½ mark)

(b) Yellowing of leaves appears first on lower leaves, leaves turn brown and fall prematurely, stunted growth (½ mark)

(c) Leaf curling, yellowing of leaves, tips and edges of leaves are scorched and have small mottles (½ mark)

(d) Purpling of leaves, stunted growth, slender stalks and lateral buds remain dormant (½ mark)

27 (a) Why is the use of the following items essential during the harvesting of tea?

(i) plucking stick (1 mark)

(ii) woven basket (1 mark)

(b) The diagram below illustrates a field management practice in tomatoes. Study it carefully and answer the questions that follow.

(i) identify the field practice. (½ mark)

(ii) state **three** reasons for carrying out the practice. (1½ marks)

SECTION C (40 marks)

*Answer any **TWO** questions from this section in the spaces provided after question **30**.*

28 (a) Describe the production of dry beans (*Phaseolus vulgaris*) under the following sub-headings:

(i) varieties common in Kenya; (2 marks)

(ii) selection and preparation of planting materials; (3 marks)

(iii) planting and weeding. (5 marks)

(b) Describe **ten** safety precautions that should be taken when using herbicides to control weeds. (10 marks)

29 (a) Explain **five** advantages of mulching in crop production. (5 marks)

(b) Outline **five** activities that may be undertaken in organic farming. (5 marks)

(c) Discuss **ten** benefits a farmer is likely to get by using vegetative propagation in production of oranges. (10 marks)

30 (a) Explain **ten** roles of a farm manager in agricultural production. (10 marks)

(b) Describe **five** roles of agricultural based women groups in farming. (5 marks)

(c) Describe land preparation and planting in carrot production. (5 marks)

SECTION A (30 marks)

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

1 Study the table below and fill in the missing words. (3 marks)

Description	Cattle	Pigs	Poultry
Young from birth/hatching to weaning.	.....	.....	Chick
Young female before first parturition/ laying.	.....	Gilt	.....
Mature male for breeding.	Bull	.....	.....

2 Name **two** viral diseases that affect each of the following livestock:

(a) Cattle (1 mark)

(b) Poultry (1 mark)

3 Name **one** intermediate host for each of the following livestock parasites:

(a) Liver fluke *(Fasciola spp.)* (½ mark)

(b) Tapeworm *(Taenia spp.)* (½ mark)

4 Give **four** reasons for feeding a lamb on colostrum. (2 marks)

5 State **four** advantages of artificial calf rearing in dairy cattle management. (2 marks

6 State **four** harmful effects of tsetse flies *(Glossina spp)* in livestock. (2 marks)

7 Why is raddling essential in sheep management? (1 mark)

8 Give four reasons for steaming up in dairy cattle management. (2 marks)

9 State four limitations of using hydroelectric power on the farm. (2 marks)

10 Give two reasons for maintaining a wheelbarrow in good working condition. (1 mark)

11 Differentiate between the following tools:

(a) Bastard file and rasp file; (1 mark)

(b) Copying saw and hacksaw. (1 mark)

12 Name two livestock diseases that are caused by protozoa. (1 mark)

13 State **four** ways of restraining cattle during routine management. (2 marks)

14 What is meant by the following terms as used in livestock health:

(a) Incubation period; (1 mark)

(b) Mortality rate. (1 mark)

15 State **two** conditions that may inhibit milk let-down during milking. (1 mark)

16 Give **four** reasons for rearing indigenous cattle in marginal areas of Kenya. (2 marks)

17 Why are the following conditions maintained during artificial incubation of eggs in poultry production?

(a) Proper ventilation; (1 mark)

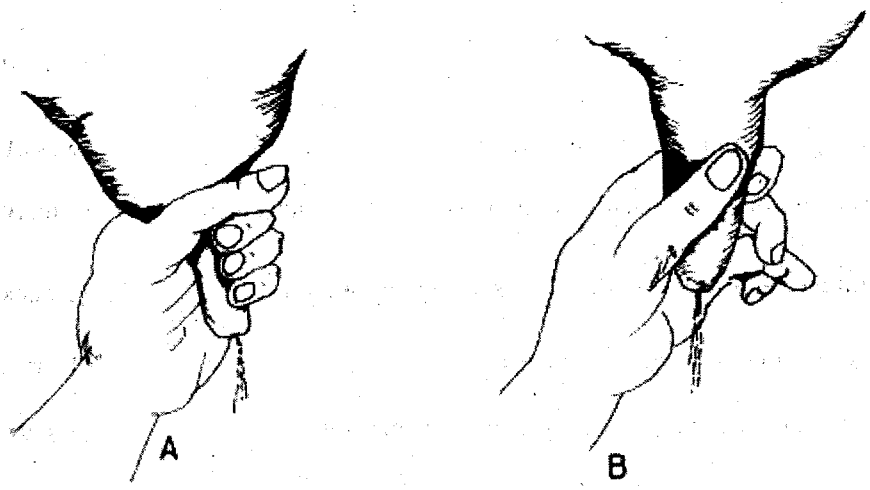
(b) Relative humidity at 60%. (1 mark)

SECTION B (20 marks)

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

18. The diagrams labelled **A** and **B** below illustrate two different milking techniques.

Study them and answer the questions that follow.

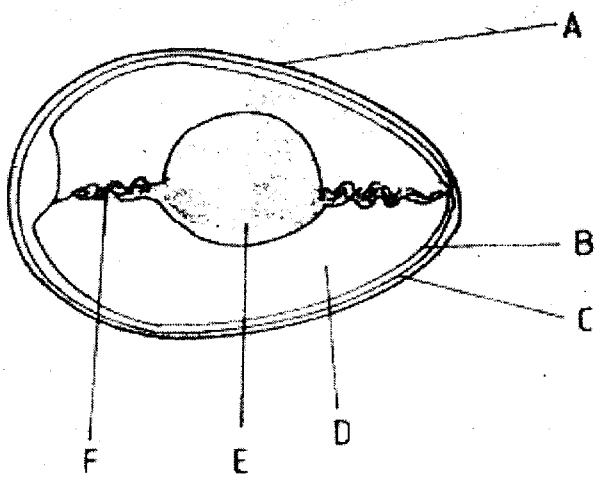


(a) Identify the appropriate technique for milking. (1 mark)

(b) Describe the procedure of milking technique in (a) above. (2 marks)

(c) State **two** disadvantages of using a wrong milking technique. (2 marks)

19 The diagram below is an illustration of an egg. Study it carefully and answer the questions that follow.



(a) Name the parts labelled **B**, **C**, **D** and **F**.

B ..... (½ mark)

C ..... (½ mark)

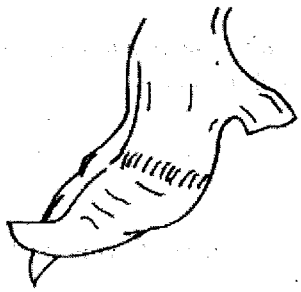
D ..... (½ mark)

F ..... (½ mark)

(b) State **two** qualities of **the part labelled A that should** be considered when selecting eggs for incubation. (2 marks)

(c) What is the function of the part labelled **E** in a fertilized egg? (1 mark)

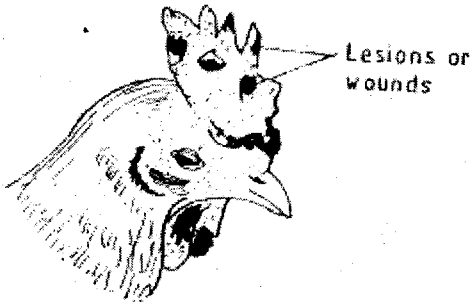
20 The diagram below illustrates a hoof of a sheep. **Study** it carefully and answer the questions that follow.



(a) Name the routine management practice that should be carried out on the hoof illustrated above. **(1 mark)**

(b) State **two** reasons for carrying out the **management** practice in (a) above. **(2 marks)**

21 The following diagram illustrates a symptom of a disease in poultry. **Study it carefully and answer the questions that follow.**



(a) Identify:

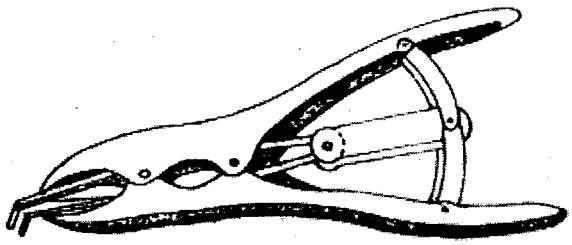
(i) the disease; (½ mark)

(ii) the causal organism. (½ mark)

(b) Apart from lesions, state **two** other symptoms of the disease. (2 marks)

(c) State **two** control measures for the disease. (2 marks)

22 Below is an illustration of a livestock management equipment. Study the diagram and answer the questions that follow.



(a) Identify the equipment. (1 mark)

(b) State the use of the equipment. (1 mark)

SECTION C (40 marks)

*Answer any **TWO** questions from this section in the spaces provided after question 25.*

23 (a) Describe **ten** signs of ill-health in livestock. (10 marks)

(b) Describe the process of digestion in the following sections in the alimentary canal of a non-ruminant animal:

(i) mouth; (1 mark)

(ii) stomach; (3 marks)

(iii) small intestines. (6 marks)

24 (a) Outline **five** benefits of using biogas as a source of power on the farm. (5 marks)

(b) Give **five** advantages of using a subsoiler in seedbed preparation. (5 marks)

(c) Explain **five** factors that a farmer should consider when siting a bee hive to prevent swarming of bees. (10 marks)

25 (a) Describe the life cycle of a named tapeworm *(Taenia spp)*. (10 marks)

(b) Describe the process of egg formation in the reproductive system of a hen. (10 marks)