KCSE PREDICTION 1 2022
AGRI PAPER 1

SECTION A (30 MARKS)
Answer ALL the questions in this section in the spaces provided.

1. Define organic farming (1mark)
2. List THREE soil constituents (1 ½ mark)
3. Give FOUR benefits of crop rotation (1mark)
4. State TWO disadvantages of using hydram pumps in pumping water in the farm (1mark)
5. List FOUR benefits of land consolidation in farming (2marks)
6. Name a crop weed that is:
   (i) Parasitic to maize crop ($^1/_2$ mark)
   (ii) Alternate host for rusts ($^1/_2$ mark)
   (iii) Aquatic ($^1/_2$ mark)
   (iv) Has medicinal value ($^1/_2$ mark)
7. State THREE ways in which nitrogen is lost from the soil (1½ marks)
8. State FOUR benefits of mulching in soil and water conservation (2marks)
9. Give FOUR disadvantages of using organic manures in crop production (2marks)
10. (i) Define opportunity cost (1mark)
    (ii) Name Two types of inventory records kept by farmers (1mark)
11. (a) Give TWO importance of sub-soiling (1mark)
12. Give THREE ways in which nutrients can be lost from silage in a silo (1½ mark)
13. (i) Give TWO destructive effects of moles in crop production (1mark)
    (ii) Apart from moles, name TWO other rodent pests (1mark)
14. Give THREE characteristics of fixed inputs (1½ marks)
15. List FOUR financial documents kept by farmers (2marks)
16. State FOUR field pests that attach maize (2marks)
17. Differentiate between apiculture and aquaculture as used in Agriculture (1mark)
18. State TWO ways in which burning leads to loss of soil fertility (1mark)
19. State TWO benefits of hardening off seedlings before transplanting . (1mark)

SECTION B (20 MARKS)
Answer ALL the questions in this section in the spaces provided.

20. The photograph below shows a farming practice. Study it and answer the questions that follow.



(i) Name the practice (1mark)
(ii) Name one crop to which the practice is applicable (1mark)
(iii) Give TWO benefits of the practice above (2marks)

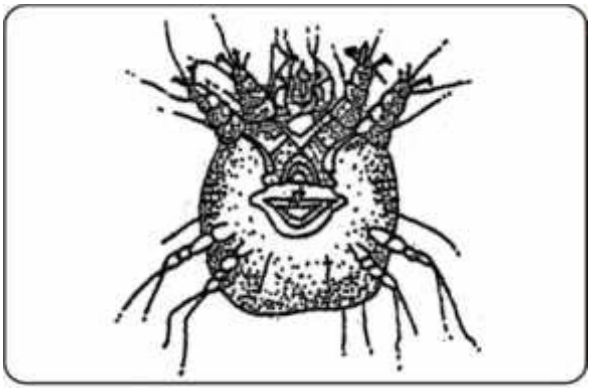
FOR MARKING SCHEMES INBOX 0724351706

21. Study the farm record below and use it to answer the questions that follow.

Date	Amount Sold	Price per unit (Kshs.)	Total value (Kshs)	Where sold	Remarks
19/5/2015	120kg	30	3,600	Professional Agrovet	Fair Price
20/5/2015	150kg	32	-	Nunguni Agrovet	To supply more

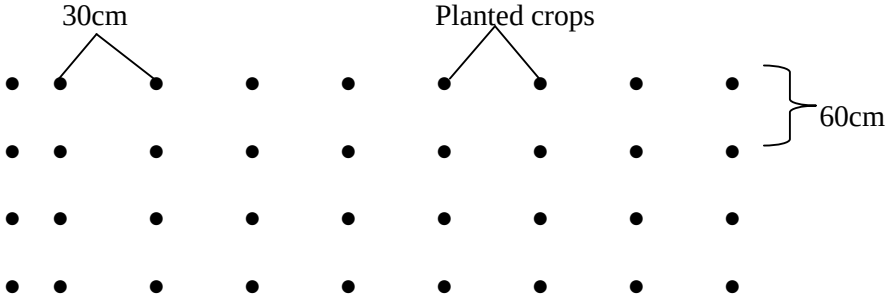
(i) Name the type of farm record above (1mark)
(ii) On the record fill the missing values (1mark)
(iii) Give a farm statement that heavily depends on information extracted from the farm record named above (1mark)

22. The diagram below illustrates a crop pest



(i) Identify the pest (1mark)
(ii) Give TWO reasons why the above pest is difficult to control (2marks)
(iii) Give a reason why indiscriminate use of pesticide on the farm may cause increased crop damage by the above pest (1mark)

23. The diagram below shows a method of planting used to establish a certain variety of crop



(i) Identify the method of planting used (1mark)
(ii) Give the interplant spacing followed above (1mark)
(iii) Give THREE advantages of the above method of panting (3marks)
(iv) The spacing above was used to establish a crop on an area of land measuring 6m by 3m. Calculate the crop population. Show your working (4marks)

SECTION C (40 MARKS)

Answer ANY TWO questions from this section in the spaces provided.

24. (a) Explain challenges faced by Kenyan vegetable farmers in the production of crops (10mks)
(b) Discuss various safety precautions observed when using herbicides (5mks)
(c) Describe the benefits of minimum tillage in crop production (5mks)

25. (a) Outline various ways in which land fragmentation increases the cost of food production in Kenya (5mks)
(b) Describe the importances of top dressing in pasture establishment (5mks)
(c) Explain FIVE factors that influence soil erosion (10mks)

26. (a) Describe the importance of any FIVE nursery management practices in crop production (10mks)
(b) State the functions of farm manager in agricultural production (10mks)

FOR MARKING SCHEMES INBOX 0724351706

Kenya Certificate of Secondary Education
443/2
AGRICULTURE PAPER 2

SECTION A (30 MARKS)
Answer ALL the questions in this section in the spaces provided.

1. State FOUR categories of produce stores found in a farm (2mks)
2. Give TWO reasons for tooth clipping in piglets (1mk)
3. State TWO uses of a rake (1mk)
4. State TWO diseases that may affect bees in a colony (1mk)
5. Differentiate between a heifer and a cow (1mk)
6. Name FOUR species of livestock that are affected by tapeworms (2mks)
7. Name FOUR viral diseases that affect poultry (2mks)
8. State FOUR disadvantages of natural incubation in poultry production (2mks)
9. Name TWO causes of bad flavours in milk production (1mk)
10. Give TWO causes of death in cows during or after parturition (1mk)
11. Differentiate between roughages and concentrates as used in livestock nutrition (1mk)
12. List THREE zoonotic diseases that can occur on the farm (1½ mks)
13. State FOUR uses of harrows on the farm (2mks)
14. State FOUR signs of heat in pigs (2mks)
15. Name FOUR plant species that can be used to establish live fences (2mks)
16. Give TWO benefits of scattering grains in a deep litter poultry house (1mk)
17. List THREE types of lubrication systems in farm machines (1½ mks)
18. List THREE sheep breeds reared for meat production in Kenya (1½ mks)
19. List THREE farm tools used during castration of farm animals (1½ mks)
20. Give FOUR disorders associated with calcium deficiency in livestock (2mks)

SECTION B (20 MARKS)
Answer ALL the questions in this section in the spaces provided after every question.

21. The photograph below illustrates a livestock rearing practice carried out in the farm.

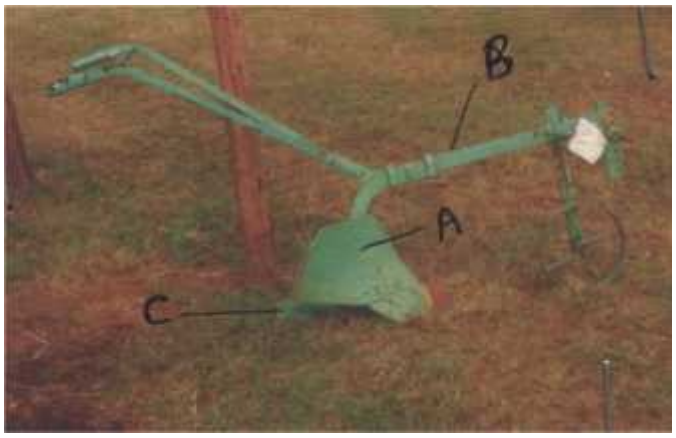


(i) Identify the practice (1mk)
(ii) Give two farm tools used to carry out the above practice (2mks)
(iii) Give TWO importances of carrying out the above process (2mks)

22. Fill in the table below (3mks)

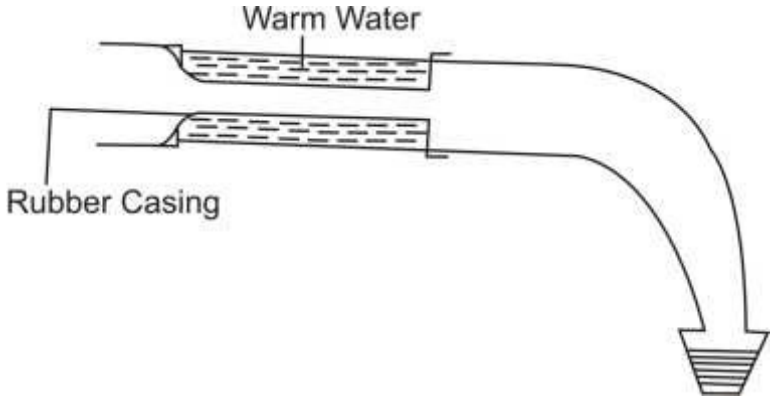
Animal	Gestation Period
Cattle	
Pig	
Rabbit	

23. The photograph below shows a farm implement



(i) Identify the implement (1mk)
(ii) Label parts A and B (2mks)
(iii) State the function of part labeled C (1mk)
(iv) Explain TWO maintenance practices done on the implement (2mks)

24. The diagram below shows an equipment used in livestock breeding.



(i) Identify the equipment (1mk)
(ii) What is the importance of:
(a) Using warm water on the equipment (1mk)
(b) Smearing Vaseline jelly on the rubber casing before use (1mk)
(iii) Outline the procedure of using the above equipment in the farm (3mks)

SECTION C (40 MARKS)

Answer ANY TWO questions in this section in the spaces provided after question 27

25. (a) Discuss symptoms of tapeworm attack in farm animals (5mks)
(b) Discuss pneumonia disease in livestock under the following sub-headings
(i) Animals attached (3mks)
(ii) Predisposing factors (3mks)
(iii) Symptoms of attack (4mks)
(c) Describe qualities of a goat house that help to control diseases (5mks)
26. (a) Outline the importance of water in livestock nutrition (6mks)
(b) Give FOUR functions of the gear box in a tractor (4mks)
(c) Discuss ways of improving milk production (5mks)
27. (a) Give FIVE qualities of camels that enable them to survive the harsh conditions of arid and semi-arid areas (5mks)
(b) Outline various challenges hampering successful poultry production in Kenya (7mks)
(c) Discuss uses of various farm hand tools in the construction of a cattle dip (8mks)

KCSE PREDICTION 2 2022
Kenya Certificate of Secondary Education (K.C.S.E.)
AGRICULTURE
PAPER 1
TIME: 2 HOURS

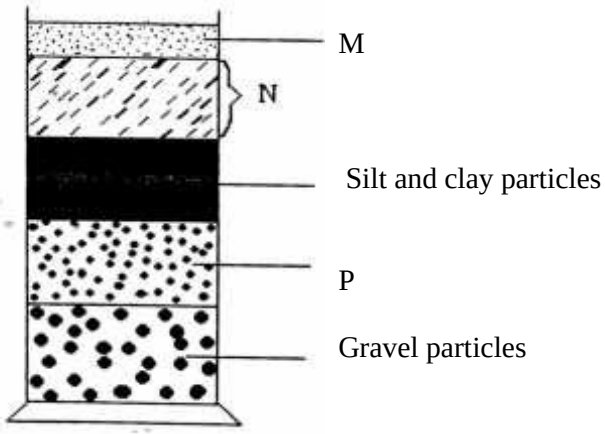
SECTION A (30 MARKS)
Answer ALL Questions in the Spaces Provided

1. State **two** precautions when handling inoculated seeds. (1mk)
2. State **four** causes of land fragmentation in Kenya. (2mks)
3. Explain the meaning of the following post-harvesting practices carried out in crops such as beans. (½mk)
   (i) Dusting:……
   (ii) Threshing:……
   (iii) Cleaning:……
4. Give **four** characteristics that a good plant used as green manure should possess. (2mks)
5. State **four** ways in which chemical kills the weed in the crop field. (2mks)
6. Outline **three** factors that determine the method of harvesting crops. (½mk)
7. State **three** ways in which crop rotation may improve soil fertility. (1½mks)
8. State **three** ways in which primary tillage destroy soil-borne pests. (1½mks)
9. State **four** ways of improving labour productivity in a tea plantation. (2mks)
10. Give **four** edaphic factors that influence crop production. (2mks)
11. Differentiate between the term afforestation and reafforestation. (1mk)
12. Explain the importance of gapping in crop production. (1mk)
13. State **three** possible solutions to curb the problem of perishability in horticultural crops. (1½mks)
14. Give **three** reasons why an inventory should be updated from time to time. (1½mks)
15. (a) What is meant by the term joint product as used in production economic? (1 mk)
    (b) List **two** joint-products in crop production. (1mk)
16. (a) Mention **three** methods of forage conservation. (1½mks)
    (b) Outline **three** effects of frequent early defoliation. (1½mks)
17. List **three** Financial Documents. (1½mks)
18. Study the following types of vegetable crops:-
    - Cowpeas
    - Spring onion
    - Pigeon peas
    - Pepper
    - Tulips

    Identify:-
    (i) Leaf vegetable (½mk)
    (ii) Fruit vegetable (½ mk)

SECTION B (20 MARKS)
Answer all questions in the spaces provided in this section

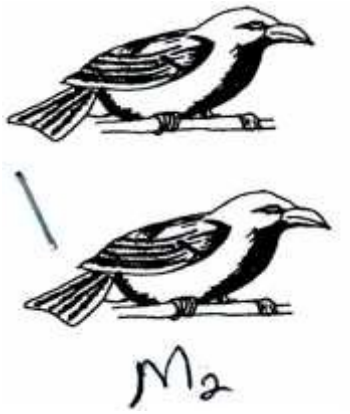
19. The diagram below shows the result of an experiment carried out by a form one student. The student mixed water with sodium carbonate then added in a soil sample after which thorough shaking was done and the contents were left to settle on a bench.

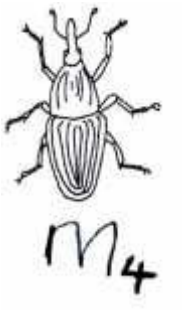


(a) What was the aim of the above experiment? (1mk)

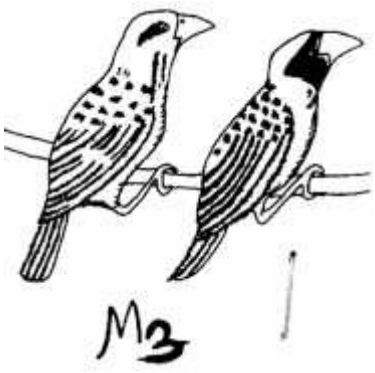
(b) Identify the layers represented by M, N and P. (2mks)
(c) What was the role of sodium carbonate used in the experiment? (1mk)

20. The diagrams below illustrate both field and storage pests.









(a) Identify the pests in the illustration. (1½mark)
M_1: M_2: M_3:
(b) State **two** ways by which pest labelled M_2 causes loss in cereal crops. (2marks)
(c) State **three** methods which are used to control the pest labelled M_2. (2marks)

21. Study the following field practice.



(a) Identify the practice carried out in the above diagram. (2marks)
(b) Give **four** reasons for carrying out the above practice. (2marks)
(c) Outline **two** limitations of the above practice. (2marks)

22. A farmer wishes to change her enterprise from vegetable production to dairy cattle rearing. The cost s she incurs in growing of vegetables is as follows:-

Weed	Sh. 200
Harvesting	Sh. 300
Fertilizer	Sh. 500
Seeds	Sh. 400

When she changes her enterprises to dairy cattle rearing, she incurs the following:-

Cost of buying cattle	Sh. 5000
Disease	Sh. 200
Salary of milk person	Sh. 2000
Fencing	sh. 500

The revenue she got when growing vegetable is 10,000.
In dairy production, he revenue she gets from milk sales is Shs. 15,000 and manure sales shs. 1,000.
Draw up the partial budget and indicate the effect of the change. (Show your working) (5marks)

SECTION C
Answer any two questions in the spaces provided

23. (a) Describe the production of beans under the following sub-topics:
(i) Planting (2marks)
(ii) Field Management Practices. (4marks)
(iii) Harvesting. (2marks)
(b) Outline the safety measures in the use of chemicals to minimize environmental pollution. (8marks)
(c) Explain **four** qualities of a good silage. (4marks)
24. (a) Explain **five** biological factors that influence soil formation. (10marks)

(b) Describe the causes of crop diseases. (5marks)

(c) Describe the field production of tea under frame formation by pegging method. (5marks)

25. (a) Describe the procedure of harvesting sugarcane. (5marks)

(b) Explain how farmers overcome risks and uncertainties in farm business. (7marks)

(c) Use the information given in the table below to answer the questions that follow.

Fertilizer inputs (units)	Potato yield (bags)	Marginal product (bag)
0	50	-
1	62	12
2	66	4
3	68	2
4	69	1
5	69	0

The cost of fertilizer is shs. 320 per unit and the price of potatoes is shs. 200 per bag.

(i) At what point of fertilizer application should the farmer be advised to stop investing in potatoes? (Show your work) (5marks)

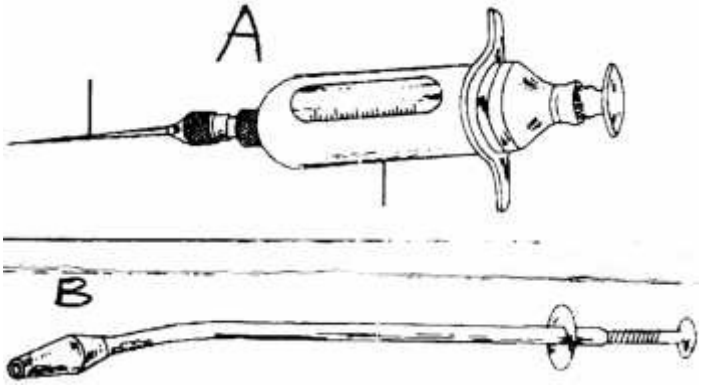
(ii) Give a reason for your answer in (i) above. (2marks)

(iii) At what level is net revenue highest? (1mark)

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AGRICULTURE
PAPER 2

SECTION A (30 MARKS)
Answer ALL Questions in the Spaces Provided

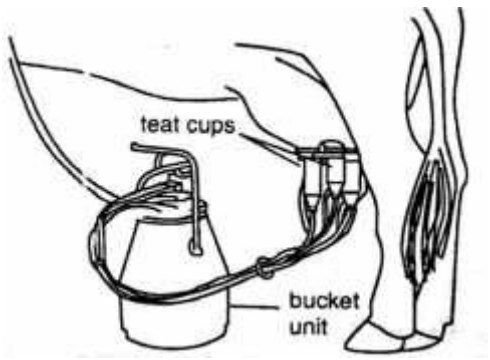
1. State **four** conditions necessary for artificial incubation in poultry production. (2mks)
2. Name **four** Beef cattle breeds. (2mks)
3. Study the diagrams below and answer the questions that follow.



   a. Identify diagrams A and B. (1mk)
   b. Give **two** uses of A. (1mk)
   c. Give the use of tool B. (1mk)
4. State **four** in pre-disposing factors of livestock diseases. (2mks)
5. State **four** functions of corner posts in barbed wire fences. (2mks)
6. (a) Name **three** meat breeds of sheep. (1½mks)
   (b) Name **one** wool breed of sheep. (½mk)
7. Give **four** control measures of tapeworm. (2mks)
8. (a) Name the equipment used in detection of mastitis. (½ mk)
   (b) State **four** predisposing factors to mastitis. (2mks)
9. (a) Name **two** Meat Goat Breeds. (1mk)
   (b) Name **one** Hair Goat Breed. (½mk)
10. State **four** preventive measures in disease control in livestock. (2mks)
11. State **four** factors considered when planning for a farm structure. (1mk)
12. Apart from Dipping, give **two** other methods of Acaricide application. (1mk)
13. Give **two** major physical differences between Dromedary and Bactrian camels. (2mks)
14. State **four** disadvantages of a spray Race. (2mks)
15. State **three** advantages of Natural mating. (3mks)

SECTION B (20 MARKS)
Answer all questions in the spaces provided in this section

16. Study the diagram below and answer the questions that follow.

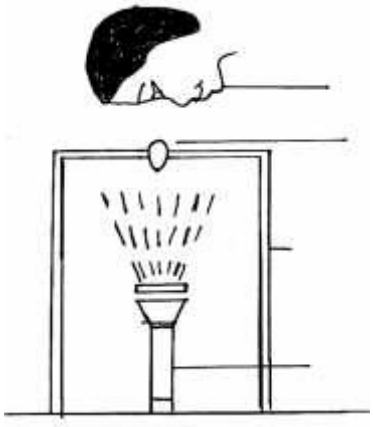


   a. Identify the above practice. (1mk)
   b. (i) State the next procedure immediately after the removal of teat cups from the teats. (1mk)
      (ii) Why is it necessary to carry out the procedure in b (i) above? (1mk)
   c. What is meant by the term Dry Cow Therapy? (1mk)

FOR MARKING SCHEMES INBOX 0724351706

d. Which hormone is responsible for stimulating milk-let-down? (1mk)
e. Why is it not advisable to feed silage to dairy animals just before milking? (1mk)

17. The diagram below shows a certain practice in poultry production.



a. Identify the above practice. (1mk)
b. State **three** abnormalities that can be detected by using the above procedure. (1½mks)
c. What is the function of egg yolk? (1mk)

18. (a) Mr. Baraza wanted to prepare a feed ration containing 20% DCP (Digestible Crude Protein). He used oats which contain 12% DCP and Simsim seed cake which contains 50% DCP. Using the Pearson's square method, compute the amounts of oat and simsim seed cake he would use to make a 100kg ration. Show your working. (4mks)
(b) What is a ration? (1mk)

19. State **five** harmful effects of ticks in livestock production. (5mks)

SECTION C

Answer any two questions in the spaces provided

20. (a) State **five** advantages of using animal power. (4mks)
(b) Give **five** advantages of four-stroke engines. (8mks)
(c) State **five** disadvantages of Natural mating in livestock rearing. (5mks)
(d) Briefly explain **five** factors considered in siting an Apiary. (3mks)

21. (a) Briefly explain **five** functions of water in the body of an animal. (5mks)
(b) (i) Define the term Notifiable disease. (1mk)
(ii) Give the causal organism for Anthrax. (1mk)
(c) State **five** symptoms of East Coast Fever. (5mks)
(d) Give **five** characteristics of Beef Cattle Breeds. (5mks)

22. (a) Give **four** reasons for Dehorning in livestock production. (4mks)
(b) Explain **eight** factors to be considered when selecting a breeding stock. (16mks)

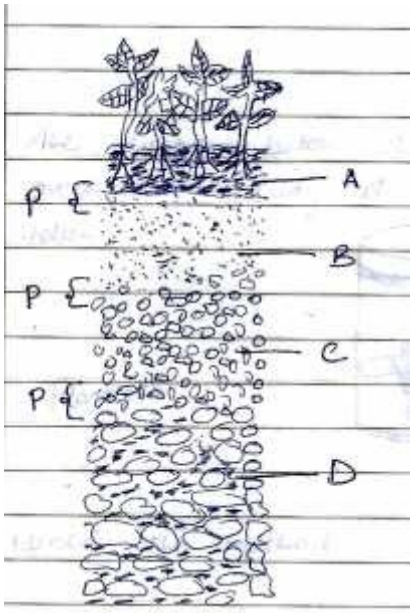
KCSE PREDICTION 3 2022
443/1
AGRICULTURE
PAPER1

SECTION A (30 MRKS)
Answer all question in this section in the space provided

1. Differentiate between olericulture and pomoculture as used in crop production . (1mrk)
2. List the physical weathering agents in soil formation process (1½ mrks)
3. Give four method of farming (2mrks)
4. Give two examples for each of the following types of cost incurred in broiler production.
   a) Variable cost (2 marks)
   b) fixed cost (2 marks)
5. Give four advantages of crop rotation . (2mrk)
6. State four factors that that should be considered when classifying crop pest (2mrks)
7. Give three reasons why a water logged soil is unsuitable for most crops (1½mks)
8. Give four advantages of tissue culture (2mrks)
9. Outline four observable indictors of economic development of a nation (2mrks)
10. Outline four indicators of well decomposed manure (1½mks)
11. Give two conditions where opportunity cost does not exist (2mrks)
12. Give four management practice that promote high herbage yields in pasture production (2mrks)
13. Give three reasons why primary cultivation should be done early before the onset of the rains (1½mks)
14. Give two examples of farm records that are general in nature . (1mrk)
15. Give four role of nitrogen in plants (2mrks)
16. Give four benefits of possessing a land title deed (2mrks)

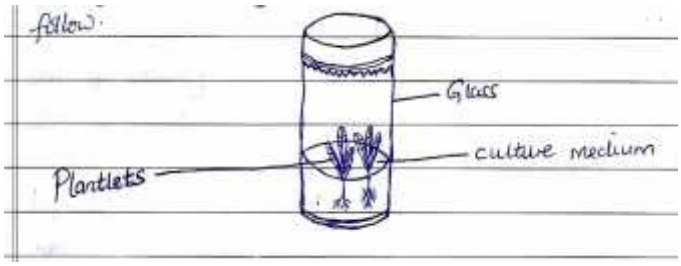
SECTION B (20 MRKS)
Answer all the questions in this section in the spaces provided

17. The diagram below illustrates a feature observed after digging the soil several metres deep Study the diagram carefully and answer the question that follow



   a) Identify the feature that the diagram above represents in the study of soil (1mrk)
   b) What is the name given to the part labeled p (1mrk)
   c) Give a reason why part b is also reffered to as layer of accumulation (1mrk)
   d) State two ways in which the knowledge of the above feature would be of benefit to farmer (2mrks)

18. The diagram below shows a method of crop propagation .Study it and answer the questions that follow



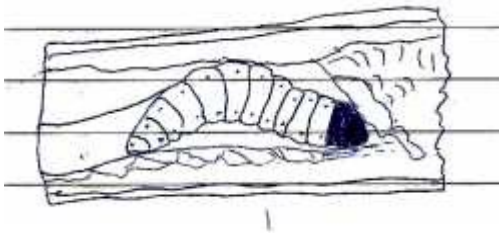
a) Identify the method (1mrk)
b) Name two crops that can be propagated using this method. (1mrk)
c). Give three ingredients used when preparing the tissue culture. (1 ½mks)

19. The following information was obtained from the records of Mr Juma's farm for the year ended on 31st march 2011

Particulars	kshs
Opening Valuation	100,000
Calves	72,000
Hired Labour	21,000
Sales of milk	13,000
Sales of cereals	33,000
Rent	9,000
Feed	5,300
Seed	1,700
Fertilizers	4,700
Sales of Vegetables	9,300
Sales of poultry	1,800
Sales of fruits	700
Pesticides	1,250
Depreciation	650
Repair and Maintenance	950
Interest on loans	200
Closing Valuation	9,0000

a) using the information given above , prepare a profit and loss account for Mr Juma's farm for the year ended 31st March (7mrks)
b) Giving a reason, State whether Mr. Juma's farm made a profit or loss (½ mark)

20 The diagram below shows a maize stalk infected by a certain pest .Study it and answer the questions that follow .



a) Indentify the pest (1/2mks)
b) Apart from maize, name another crop attacked by the pest named above (½ mark)
c) Give three cultural measures that can be applied to control the pest (3mrks)

SECTION C (40MARKS)

Answer any two questions in this section in the spaces provided

21 a) Describe six advantages of rotational grazing (6mrks)
b) Explain eight ways in which soil fertility can be maintained (8mrks)
c) Explain six factors considered when drawing a farm plan (6mrks)

22 a) Explain the factors that influence the type of irrigation to be used in a farm (8mrks)
b) Explain six reasons for pruning coffee. (6mrks)
c) Describe 6 ways in which lab our productivity can be improved on a farm (6mrks)

23 a) Describe five importance of agro -forestry in soil and water conservation (6mrks)
b) Describe the procedure of silage making (10mrks)
c) Describe five effect of over application of nitrogenous fertilizer. (5mrks)

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AGRICULTURE
PAPER 2

2HOURS

SECTION A 30MRKS

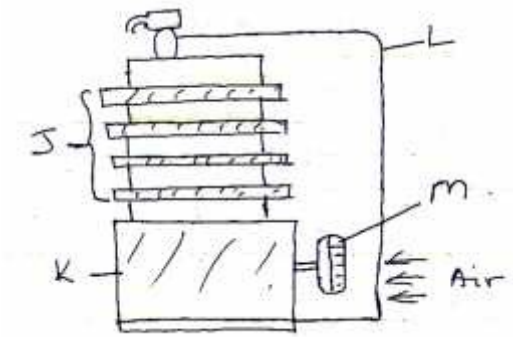
Answer all the questions in this sections in the spaces provided

1. Name the most appropriate tools used in the following operations
   a) Removing metal chippings in file (1mark)
   b) Cutting wood along grains (1mark)
   c) Branding (1marks)
2. State four characteristic of Boran cattle (2marks)
3. State two functions of a useful bacteria in livestock production (1mark)
4. Name four function of lipid in an animal body (2marks)
5. State two ways of reducing friction in moving part of farm tool (1mark)
6. Outline four types of fence that can be used in mixed farm (2marks)
7. Name three methods of out breeding in livestock production. (1 ½ marks)
8. Give two reasons for tailing in sheep production (1mark)
9. Name any five internal parts of cow's udder (2 ½ marks)
10. Give five ways of transmitting livestock diseases (2 ½ marks)
11. Give four features of improved grain bin (2mrks)
12. Give three types of calving complications (1 ½ marks)
13. State four advantages of zero grazing as a grazing system (2marks)
14. State two functions of a queen bee in a colony (1mark)
15. Name four symptoms of anaplasmasis in livestock (2marks.
16 . What do you understand by the following terms as used I animal production .
   a) Coponisation (1mark)
   b) Bullock (1mark)
   c. Epistasis (1mark)

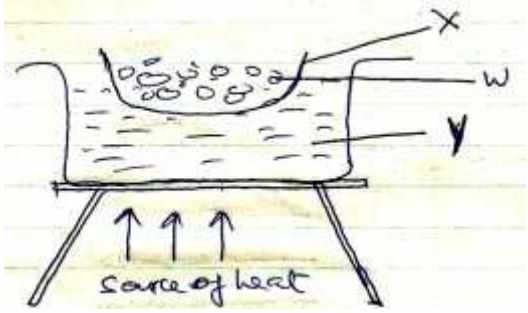
SECTION B (20Mrks)

Answer all the questions in the spaces provided

17. Below is a diagram of a cooling system .Study it and answer the questions that follow



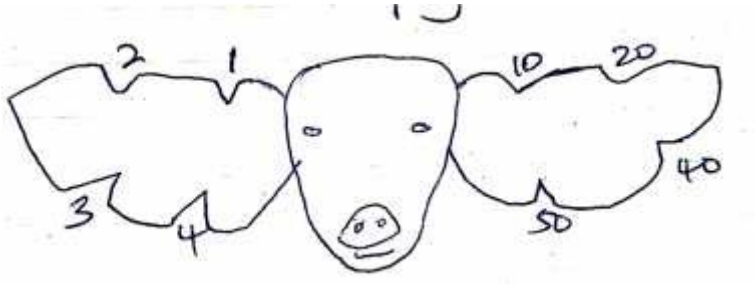
   a) Identify the type of cooling system illustrated (1mrk)
   b Name parts labelled J, K , L and M (2mrks)
   c. Name two problems associated with the type of cooling system illustrated above (2mrks)
18. Below is an illustration of a method of extracting honey from combs .Study the diagram and answer the question that follow .



FOR MARKING SCHEMES INBOX 0724351706

a) Indentify the above method of extracting honey (1mrk)
b) Give a reason why container x should not be heated directly (1mrk)
c) Name the parts labeled w and y (2mrks)
d) Besides the above method ,State one other method of extracting honey (1mrk)

19 The diagram below shows a certain practice carried out on pig



a) Identify the practice illustrated above (1mrk)
b) Draw another illustration depicting pig number 37 (1mrk)
c) Name the tool used to carry out the practice illustrated above (1mrk)
d) State two other method of indentifying piglet (2mrks)

20 . Below is an illustration of a farm operation .Study it carefully and answer the question that follow.



a) Identify the activity being carried out (1mrk)
b) Give one other activity carried on the animal before the above operation is carried out (1mrk)
c) Outline the procedure of carrying out the above operation (3mrks)

SECTION C

Answer any two questions in the space provided

21. a) Outline management practice carried out in a fish pond to ensure maximum harvest of fish (7mrks)
b) Discuss the importance of farm mechanization (6mrks)
c) Discuss the short term maintenance practices carried out on a tractor (7 marks)
22. a) Explain the feature of a piggery unit (10mrks)
b) Explain the factor that influence the work output of a draught animal (10mrks)
23. a) Outline various method of controlling ticks (10mrks)
b) Describe the management of growers up to the point of lay (10mrks)

KCSE PREDICTION 4 2022
Kenya Certificate of Secondary Education (K.C.S.E)
443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

SECTION A (30 MARKS)
Answer all the questions in this section in the spaces provide.

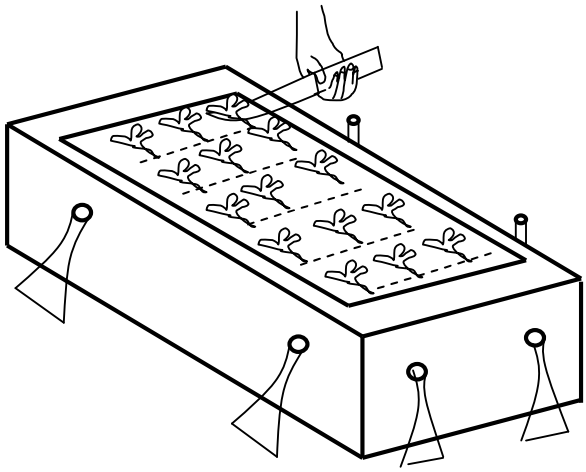
1. What is meant by the following terms
   (a) Under sowing. (1mark)
   (b) Over sowing. (1mark)
   (c) Ammonification. (1mark)
2. State four qualities of a scion for use in vegetative propagation materials (2marks)
3. Give two advantages of compound fertilizer. (2marks)
4. State four effects of soil depth on crop production. (2mark)
5. Give four ways of improving sandy soils. (2marks)
6. State two reasons for rolling in wheat crop productivity. (2marks)
7. Give four roles of cost agricultural economics. (2 marks)
8. State two effects of varying spacing in maize production. (1 mark)
9. State three financial documents in agricultural production. (1½ marks)
10. Give four disadvantages of concession land tenure systems. (2 marks)
11. State five symptoms of viral diseases in crop production. (2½ marks)
12. Give four factors that are considered when selecting a nursery site. (2 marks)
13. Distinguish between seed dressing and seed inoculation. (2 marks)
14. Give three reasons for cutting back in pyrethrum. (1½ marks)
15. Give five ways in which consolidation helps to improve farm management. (2½ marks)

SECTION B (20 MARKS)
Answer all the questions in this section in the spaces provided.

16. i) The following is a farm record Mr. Makau had kept as at 30th June 2011. Study it carefully and prepare a balance sheet for the farm. (6 marks)

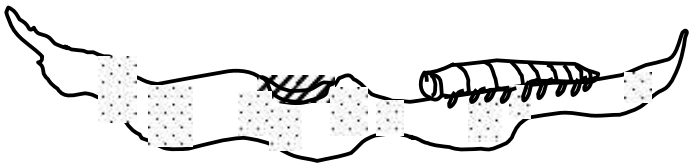
Equity loan	180,000
Equity overdraft	24,000
Working tools	30,000
Cash at hand	15,000
Cash in bank	50,000
Buildings	60,000
Debtors	18,000
Goats	48,000
Land	70,000
Creditors	49,000
Ox plough	20,000

   ii) Is Mr. Makau business solvent or insolvent? Explain (2 marks)
17. The diagram below illustrates an agroforestry practice. Study it and answer the questions that follow.



i) Identify the agroforestry practice illustrated above. (½ marks)
ii) State advantages of the practice illustrated above. (3 marks)
iii) State three forms of agroforestry. (1½ marks)

18. Study the pest below and answer the questions below.



a. Identify the pest (1 mark)
b. State two methods of controlling the pest. (2 marks)
c. Name the crops attacked by the pest. (1 mark)

19. The diagram below illustrates a field management practices in tomatoes



i) Identify the practice (1 mark)
ii) State three reasons for carrying out the practice. (3 marks)
iii) Give another practice that could be carried out to give the same results. (1 mark)

SECTION C (40 MARKS)

Answer any two questions from this section in the spaces provided after question 22

20. a) State the functions of the Kenya National Federation of Producers in Kenya (5 marks)
b) State five factors considered when drawing a farm plan (5 marks)
c) Describe the harvesting of cotton (10 marks)

21. a) Describe the production of carrots under the following sub headings
b) Seedbed preparation (3 marks)
c) Harvesting (4 marks)
d) Explain five cultural methods of weed control in bean production. (10 marks)
e) Outline three roles of sulphur in crop production. (3 marks)

22. a) Explain the effects of solifluction (6 marks)
b) Outline importance of grafting in oranges (4 marks)
c) Describe ways of improving labour efficiency (10 marks)

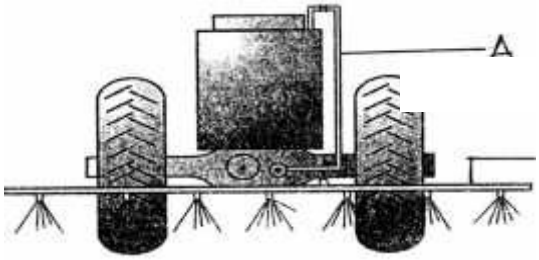
Kenya Certificate of Secondary Education (K.C.S.E.)
443/2
AGRICULTURE
PAPER 2
TIME: 2 HOURS

SECTION A (30 MARKS)
Answer all the questions in this section in the spaces provided.

1. State four heavy breeds in poultry (2 marks)
2. Give two effects of sheep lice infection in sheep production (1 mark)
3. State the advantages of contemporary comparison in selection of livestock. (2 marks)
4. State two reasons tailing in sheep management (2 marks)
5. State two functions of differential in a tractor transmission system. (1 mark)
6. Give four effects of protein deficiency in livestock production. (2 marks)
7. State four predisposing factors of pneumonia in livestock production. (2 marks)
8. Give four factors influencing milk let down in dairy cattle production. (2 marks)
9. Name four instances where animal power is advantageous over other form of powers. (2 marks)
10. State four reasons for handling dairy cattle in livestock production. (2 marks)
11. Give factors considered in choice of rearing systems in poultry production. (2 marks)
12. State four factors that affect the choice of feed stuff in livestock. (2marks)
13. Give four practices carried out on fish before preservation. (2 mark)
14. State four disadvantages of live fence in livestock production. (2 marks)
15. a) Give four prophylactic measures used in controlling diseases in livestock. (2 marks)
    b) State four mechanical measures of controlling ticks in livestock production. (2 marks)
16. State two functions of caecum in poultry production. (1 mark)

SECTION B (20 MARKS)
Answer all the questions in this section in the spaces provided.

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



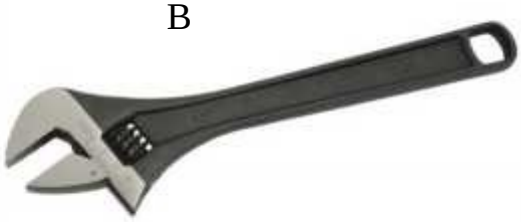
    a) Identify the implement illustrated above. (1 mark)
    b) State the use of the implement on the farm. (1 mark)
    c) Explain three maintenance practices carried out on the implement. (3 marks)

18. Below are illustrations of farm tools and equipment.

A



B



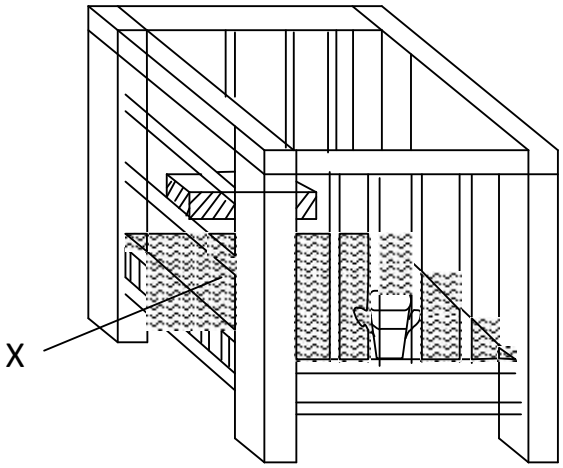
C



FOR MARKING SCHEMES INBOX 0724351706

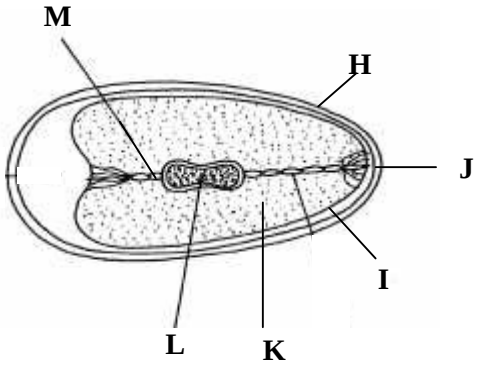
a) Identify the tool labelled A and C (2marks)
b) State the advantage of tool B over tool C (1 mark)
c) State two maintenance practices carried out on tool labelled B. (2 marks)

19. Below is a farm structure. Study it carefully and answer the questions that follow.



a) Identify the farm structure above (1 mark)
b) State the requirement of the part labelled X (1 mark)
c) State three maintenance practices that should be carried on the structure. (3 marks)

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



a) Name the parts labelled I, J, K and M. (2 Marks)
b) Give two qualities of the part labelled H that would be considered when selecting eggs for incubation. (2 Marks)
c) What is the function of the part labelled L (1 Mark)

SECTION C (40 Marks)

Answer any two questions from this section.

21. a) State five reasons for feeding livestock (5 marks)
b) Describe the factors a farmer should consider when selecting a gilt for breeding. (8 marks)
c) Outline routine management practices that should be carried out on a lactating ewe. (7 marks)
22. a) Outline routine maintenance practices that should be carried out in deep litter system. (6 marks)
b) State eight practices that would ensure clean milk production. (6 marks)
c) Compare the use of an ox-drawn mouldboard plough with that of a tractor drawn plough (10 marks)
23. a) Describe the importance of farm mechanization. (6 marks)
b) Describe East Coast Fever under the following sub headings
a) Causal organism (1 marks)
b) Signs of infection (5 marks)
c) Control measures (3 marks)
c) Outline five causes of stress in poultry. (5 marks)

KCSE PREDICTION 5 2022
Kenya Certificate of Secondary Education (K.C.S.E)
443/1
AGRICULTURE
PAPER 1
TIME: 2 HOURS

SECTION A (30 MARKS)

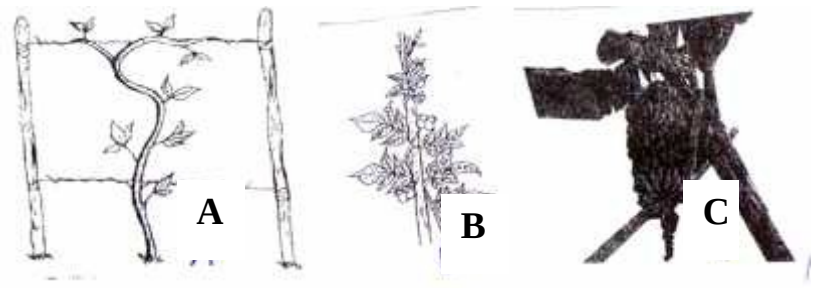
Answer all the questions in this section in the spaces provide.

1. Give **two** examples of the following: (3marks)
   a) Organic manures
   b) Straight fertilizer
   c) Incomplete compound fertilizer
2. Name the primary macronutrient responsible for the following in plants. (2marks)
   i) Protein synthesis
   ii) Proper root establishment and development
3. a) State **two t**ypes of inventories kept in a farm. (1mark)
   b) Differentiate between the two inventories in 3. a) above. (1mark)
4. State **four** factors that would increase the seed rate of maize. (2marks)
5. Give the role of the following in water treatment process. (1½ marks)
   a) Alluminium sulphate
   b) Chlorine
   c) Sodium bicarbonate
6. Outline **one** importance of the following field practices: (1½ marks)
   a) Pricking out
   b) Hardening off
   c) Gapping
7. State and explain **three** factors that determine the depth of planting. (3marks)
8. What is the meaning of the following terms: (2 marks)
   a). Arable farming
   b) Seed rate
   c) Opportunity cost
   d) Organic farming
9. Give **four** ways government policy contributes to Agriculture. (2marks)
10. Differentiate between the following terms: (2marks)
    a) Forage crop and fodder crop
    b) Oversowing and undersowing
11. State **two** crop production practices that can be carried out to maintain appropriate plant population. (1mark)
12. List **two** practices carried out during hardening off seedlings in tomato production. (1mark)
13. Give **four** reasons why grains should be properly dried before storage. (2marks)
14. Outline **four** merits of concession or company form of land tenure. (2marks)
15. a) State **two** precautions that should be observed in harvesting cotton. (1mark)
    b) List **two** methods of plucking tea. (1mark)
16. State **two** effects of too much air in a silo during silage making. (1mark)
17. Name two sources of water in the farm (1 mark)

SECTION B (20 MARKS)

Answer all the questions in this section in the spaces provided

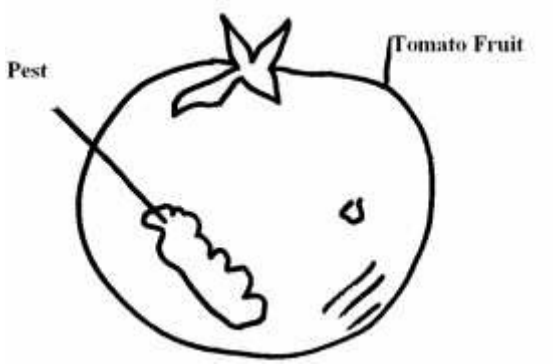
18. Below are illustrations of different forms of a field practice carried out in a farm. Use them to answer the questions that follow.



a) Identify the field practice and name each of the forms labeled **A**, B and **C.** (2marks)
Field Practice

b). State **three** importance of the above field practice. (3marks)

19. Study the diagram illustrated below and answer the questions that follow.



a) Identify the pest. (1mark)
b) Explain how the pest causes damage to the crop. (1mark)
c) Outline **three** control measures of the pest. (3marks)

20. A farmer has four plots **P1, P2, P3** and **P4** as shown in the table below. Each plot has an agronomic problem as indicated.

P1	**P2**	**P3**	**P4**
Infested with bacterial wilt	Deficient in nitrogen	Infested with witch grass *(Striga spp*)	Prone to soil erosion

a) A farmer intends to grow maize, Irish potatoes, beans and Rhodes grass. Plan a rotation for the first year of the rotation system. (2marks)
P1, P2, P3, P4

b). Account for the plan above. (4marks)

21. Study the diagram below



i) Identify the type of micro catchments illustrated above. (1mark)
ii) Name one type of crops that you can recommend to be grown under this type of micro – catchments (1mark)
iii) State **two other** types of micro- catchments that are commonly used on the farms. (1marks)

SECTION C (40MKS)

Answer any two questions from this section on the foolscaps provided.

22. (a) Outline **five** disadvantages of communal land tenure. (5marks)
(b) Name three forms of agroforestry (3marks)
(c) Give eight uses of trees in the farm (4marks)
(d) Describe the procedure of transplanting tree seedlings (8marks)

23. (a) What is a profit and loss account as used in farm accounting (1mark)

(b) The information below was gotten from Zipporah's farm. Use it to prepare a profit and loss account for Zipporah's farm for the year ended 31st Dec. 2007.(12mks)

Item		**Kshs.**
Maize seeds		10,000
D.A.P Fertilizer	25,000	
Tractor disc plough		50,000
Diesel fuel		12,000
Milk cans		2,500
Knapsack sprayer		6,500
Vetinary drugs		5,000
Herbicides		18,000
During the year the following items were sold.		
Maize to N.C.P.B		210,000
Milk to K.C.C.		500,000
Weaners		35,000
Other vital information from records.		
Opening valuation		300,000
Closing valuation		600,000
Debts receivable for tractor services		28,000
Interest payable to bank		3,000
Depreciation of machinery		7,500

(c) Is the farm operating at a profit or loss? (1mark)

(d) How much profit or loss did the farm realize? (1mark)

(e) Calculate the percentage profit or loss made by the farm (2marks)

(f) State the meaning of the following financial documents (3marks)

i) Invoice

ii) Delivery Note

iii) Receipt

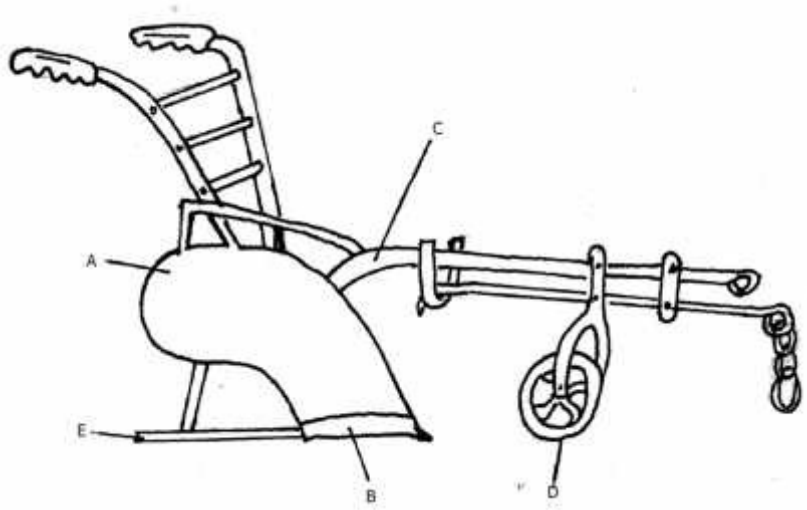
24. (a) Outline the benefits of timely planting in cereal production. (10marks)

(b) Explain biotic factors that influence agriculture. (10marks)

Kenya Certificate of Secondary Education (K.C.S.E)
443/2
AGRICULTURE
PAPER 2

SECTION A (30 MARKS)
Answer ALL questions in this section in the spaces provided.

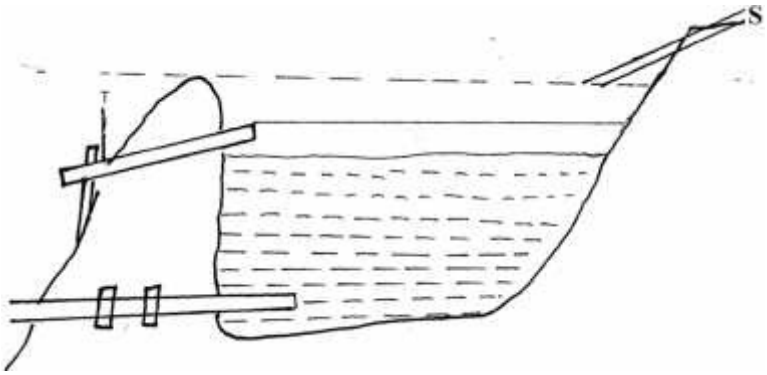
1. Outline FOUR reasons for steaming up a gestating cow (2marks)
2. Name a tool recommended for the following practices in the farm (3marks)
   i) Smoothening rough surface of wood
   ii) Making threads on metallic pipes
   iii) Breaking stones during construction and ballast in masonry
3. Name FOUR diseases transmitted by ticks (2marks)
4. Give four problems which may be experienced by a goat and kid during and immediately after kidding (2marks)
5. What are the advantages of using biogas as a source of power in the farm (2marks)
6. State FOUR factors that determine the amount of water on animal drinks (2marks)
7. What is milk let down? (1mark)
8. a) What is an incubator? (1mark)
   b) Explain how the incubator should be managed for higher hatchability (2marks)
   c) State the features considered during sorting and grading of eggs (2marks)
9. State the advantages of using wind power in the farm (3marks)
10. State TWO signs of parturition which are shown by an in-calf cow (1mark)
11. State FOUR factors considered when sitting a pigsty in a farm (2marks)
12. Below is a diagram of a farm implement



   a) Identify the implement (1mark)
   b) Label the parts marked A, B, C, D and E (2½ marks)
   c) State the functions of the parts labeled C, D and E (1½ marks)

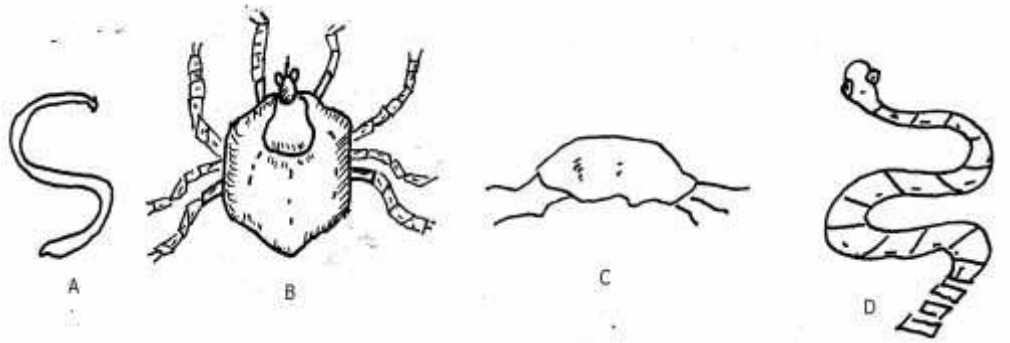
FOR MARKING SCHEMES INBOX 0724351706

13. Below is a diagram of a cross section of a fishpond



a) Identify the parts labeled T and S (2marks)
b) Why is the pond floor slanted towards one side? (1mark)
c) State two maintenance practices carried on the structure illustrated above (2marks)

14. Below are photographs of some livestock parasites. Study them carefully and answer The questions that follow

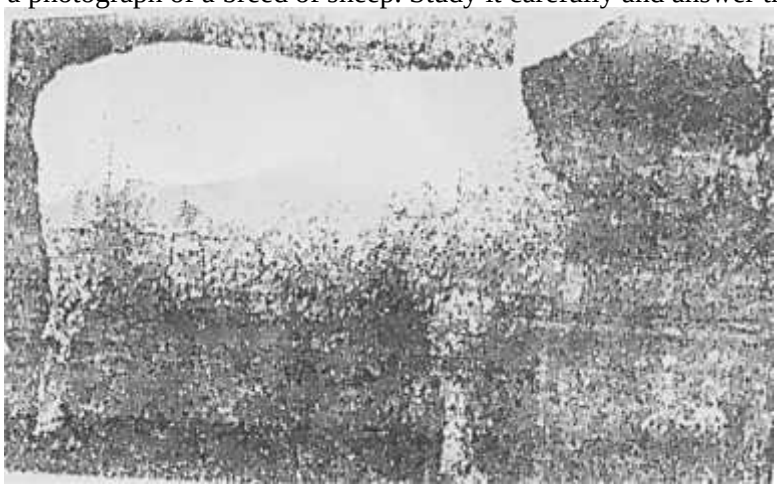


a) i) Identify the parasites and state where they are found (4marks)

Identity	Where found in animals

ii) State TWO methods of controlling parasites B (1mark)
iii) What are the effects of parasites A in animals (1mark)

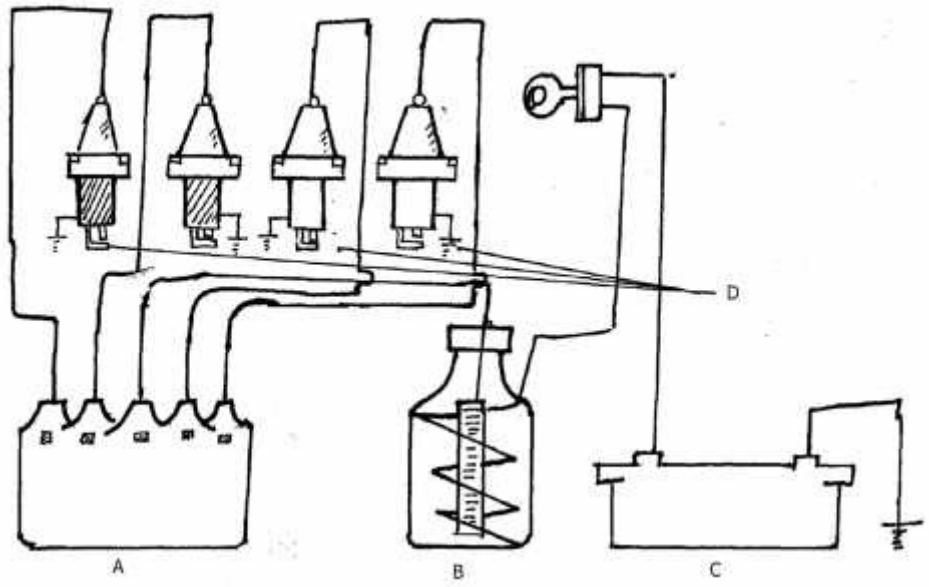
b) Below is a photograph of a breed of sheep. Study it carefully and answer the questions that follow



i) Identify the breed (1mark)
ii) The above breed is a cross between two sheep breeds. Name them (1mark)

c) Using pearsons square method, compute a 100kg ration with 20% DCP from oats which contain 10% DCP and simsim seed cake containing 60% DCP. (show your working) (4marks)

15. Study the diagram below of the ignition system of a petrol engine and answer the questions that follow



a) Identify the parts labeled A, B, C and D (2marks)
b) Give the functions of parts A and B (1mark)

SECTION C (40 MARKS)
Answer any two questions in this Section in the spaces provided.

16. a) State and explain five factors that influence the siting of farm structures (10marks)
b) Outline FIVE advantages of fences in a farm (5marks)
c) Outline five methods of reinforcing fences to make them stronger (5marks)

17. a) Explain the management practices that a farmer could carry out to improve milk production in a low yielding dairy cow (10marks)
b) Discuss Bee management under the following subheadings;
i) Locating of the Bee hive (3marks)
ii) Pests and diseases (4marks)
iii) Outline FOUR factors that determine the quality of honey (3marks)

18. a) Describe the maintenance practices needed in a tractor battery (7marks)
b) Describe the power transmission system under the following units
i) Clutch assembly (2marks)
ii) Gear box (2marks)
iii) Differential (2marks)
iv) Final drive (2marks)
c) Describe the daily maintenance in servicing of a tractor (5marks)

KCSE PREDICTION 6 2022)
443/1
AGRICULTURE
PAPER 1

SECTION A: (30 MKS)

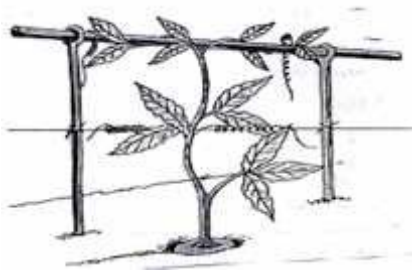
Answer all the questions provided.

1. State four limitations of pastoral farming. (2 mks)
2. Give four benefits of timely planting of crops. (2mks)
3. State 4 factors of soil which influence productivity of crops. (2 mks)
4. Give 4 conditions of land that would make it necessary to carry out reclamation practices (2 mks)
5. State 2 factors that influence the qwuantity of water used in the farm (1 mk)
6. State 4 reasons for keeping health records. (2 mks)
7. Give 2 types of inventory records. (1 mk)
8. Name 2 situations in which opportunity cost does not exist (1 mk)
9. State 3 ways in which flooded water is important in the growing of paddy rice (1 ½ mks)
10. State 4 ways of maintaining a healthy and high yield grass pasture after planting (2 mks)
11. Give three factors considered while determing the size of a silo (1½mks)
12. Give two ways in which overheating can be avoided during silage making (1 mk)
13. State 4 factors that will determine the depth of ploughing a maize field using tractor drawn implements (2 mks)
14. Give 4 ways in which cover crops help in soil and water conservation (2 mks)
15. List 5 biotic factors that affect livestock negatively (2½mks)
16. State 3 characteristics of soil that are influenced by its texture (1½mks)
17. Distinguish between contact and systemic herbicide (2 mks)
18. Give two reasons why phosphatic are applied at planting time (1 mk)

SECTION B: (20 MARKS)

Answer all the questions

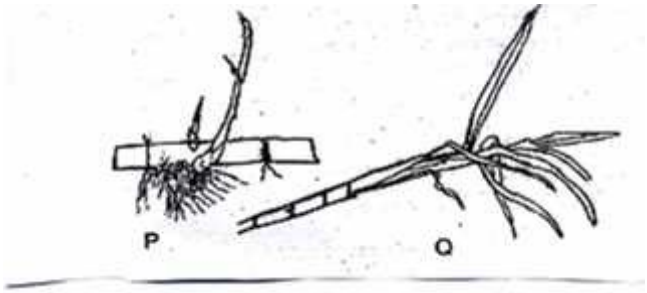
19. The diagram below shows a practice in crop production



a) i) Give the identity of the field management practice illustrated above (½mks)
ii) Give 2 reasons for carrying out the above field management practice (2 mks)

b) A plot measuring 4m x 3m was prepared for planting cabbages at a spacing of 60 cm x 60 cm. Calculate the plant population in the plot (1½mks)
show your working

20. a) Identify the illustration P and Q which are materials used in propagation of sugarcane



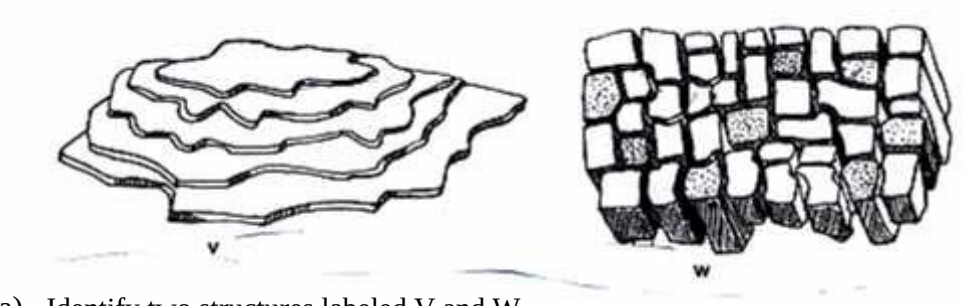
b) Giving reasons which of the above is more suitable as a planting material in sugar cane? (2 marks)
c) How is planting material in sugarcane treated to control ratoon stunted disease (1 mark)

21. The diagrams below labeled H and J are illustrated of coffee plants establishing using two different pruning systems. Examine them closely and answer the questions that follow.



a) Name the pruning systems illustrated by diagrams H and J (1 mark)
b) Give two advantages of pruning system illustrated by diagram Hover that one illustrated by diagram J (2 marks)
c) Name two types of pruning that should be carried out after the coffee bush has been established using the system J (2 marks)

22. The diagrams V and W illustrate some soil structures. Study the diagrams and answer the questions that follow



a) Identify two structures labeled V and W (1mark)
b) Name the types of soils from which structures labeled V and W can be found (1mark)
c) State two ways through which structure V may influence crop production (2 marks)

23. The diagram below shows a maize stalk infested by a certain pest. Study it and answer the questions that follow.



a) Identify the pest (½mark)
b) Give two types of damages caused to crops by the above pest (2 marks)
c) Other than maize name one other crop attacked by pest (½mark)

SECTION C :(40 MARKS)

Answer any TWO questions from this section in the spaces provided.

24. .a) Describe the field production of tomatoes under the following subheadings
    (i) Field management practices (7 marks)
    (ii) Grading of tomato fruits (3 marks)
    b) Explain five factors considered when designing a crop rotation programme (10 marks)
25. a) Explain ten factors that influence soil erosion (10 marks)
    b) Describe six benefits of land consolidation (6 marks)
    c) Explain four main objectives of establishing the early African settlement schemes (4 marks)
26. a) i) Explain the difference between stocking rate and carrying capacity (2 marks)
    ii) Discuss the advantages of rotational grazing system (5 marks)
    iii) Describe the precautions when harvesting coffee (3 marks)
    b) i) Explain harmful effects of weeds in the main field (5 marks)
    ii) Discuss the cultural methods of controlling crop diseases (5 marks)

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AGRICULTURE
PAPER 2

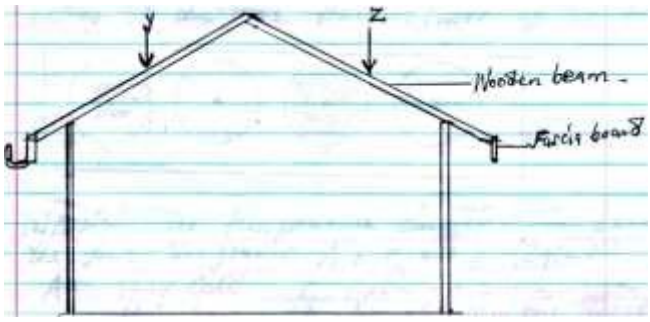
SECTION A [30 MARKS]
Answer all the questions in this section in the spaces provided .

1. Name a breed of goats that has long hair . [0.5mks.]
2. Give three factors that should be considered when sitting a bee-hive in the farm [1.5marks]
3. State four management practices that would ensure maximum harvest of fish in a fish pond [2marks]
4. Give two reasons why walls of dairy sheds should be white –washed instead of painted with water or oil paint. [1mark]
5. What is the intermediate host for liver fluke. [0.5mks.]
6. What is the duration of estrus cycle in a cow? [0.5mks.]
7. If a dairy cow was noticed to be showing first signs of heat at 6.00am.What time should she be inseminated? [1mark]
8. Give four factors that determine the amount of water required by an animal. [2marks]
9. Name three holding tools and equipment . [1.5marks]
10. Give three functions of a combination squire . [1.5marks]
11. State three functions of the differential in a tractors power transmission. [1.5mks]
12. State three factors that contribute to a high working efficiency of a disc harrow. [1.5marks]
13. List three products obtained from dromedary camel. [1.5marks]
14. If the records showed that a rabbit doe was served on 27th September2014 what date did she give birth/kindle? [0.5marks]
15. Give two signs that would show that a rabbit doe is about to parturate . [1mk.]
16. Under what conditions would it be necessary to use a file to smoothen a piece of wood instead of using a smoothing plane? [0.5marks]
17. What is the use of a plumb-bob ? [0.5marks]
18. State four characteristics of a corriedale sheep breed. [2marks]
19. State any two disadvantages that may arise from inbreeding in livestock production. [1mark]
20. Name four cattle diseases caused by bacteria. [2marks]
21. Name any two methods recommended for identifying goats. [1mark]
22. State three field conditions under which a disc plough should be used instead of a mould board plough. [1.5marks]
23. Give three symptoms of milk fever in dairy cattle. [1.5marks]
24. Give four reasons for steaming –up dairy animals. [2marks]

SECTION B [20MARKS]
Answer all questions in this section in the spaces provided .

25. The drawing below shows the cross-section of a house under construction. Study it carefully and answer questions that follow .

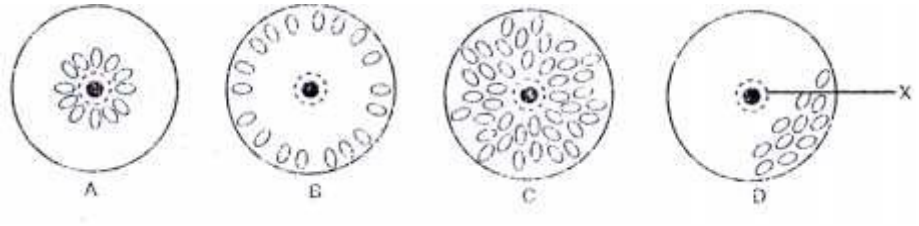
25. The drawing below shows the cross-section of a house under construction. Study it carefully and answer questions that follow .



[a] Assuming that the wooden beams are strong enough to hold the roof load .What is the most likely thing to happen when the roof load exerted presses at point Y and Z . [1mark]
[b] On the diagram provided draw and label two constructional features you would add to this structure in order to make it more efficient. [2marks]

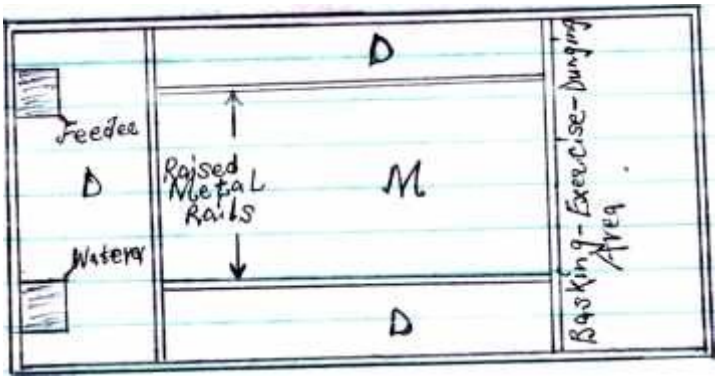
[c] State two importance of the fascia board in the farm building. [2marks]

26. The following illustration show the behavior of chicks at different temperatures of the brooder.



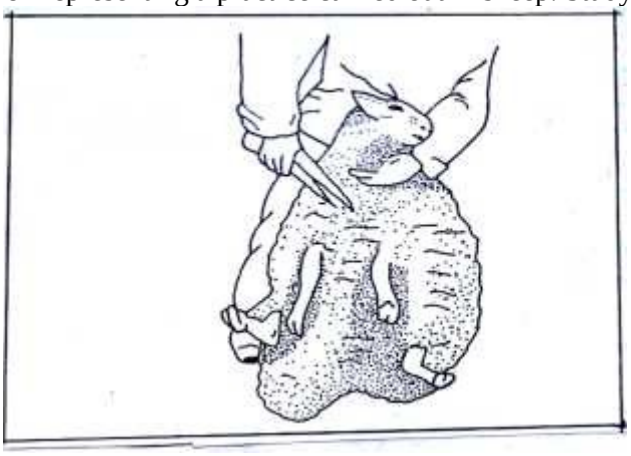
[a] Explain the temperature conditions in each of the four diagrams A ,B ,C ,and D. [2marks]
[b] Give one method of assessing temperature in the brooder. [1mark]
[c] Name two other behavioral observations on chicks when temperature is very high in the brooder. [2marks]

27. The illustration below shows a pig far rowing pen .Study it and answer questions that follow.



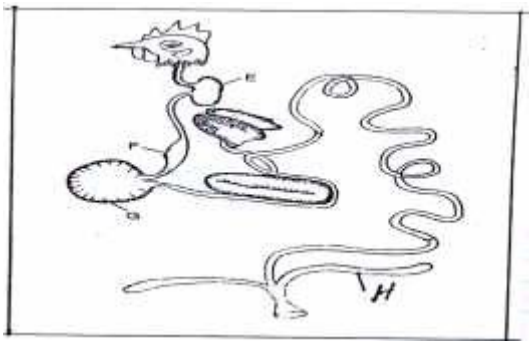
[a] What is the use of the raised metal rails. [1mark]
[b] Give two uses for the parts labeled D [2marks]

28. Below is an illustration representing a practice carried out in sheep. Study it and answer questions that follow.



[a] Identify the practice illustrated above. [1mark]
[b] State three precautions taken when carrying out the above practice. [3marks]

29. Study the illustration below of a poultry digestive system and answer questions that follow.



[a] Give two functions of part E.[2marks]
[b] State one function of part H.[1mark]

SECTION C [40MARKS]

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

30. [a] Describe ten factors that are considered during the selection of a breeding stock. [10marks]
[b] Describe five effects of parasites on livestock. [5marks]
[c] Describe the mechanical control measures of ticks. [5marks]
31. [a] Outline five reasons why bees swarm away. [5marks]
[b] Discuss the preparations and practices that should be carried out on a pregnant sow 10 days before she far rows. [5marks]
[c] Describe Gumboro disease under the following sub headings.
Causal organism [1mark]
Livestock attacked [1mark]
Symptoms of the disease [6marks]
Control measures [2marks]
32. [a] Explain five advantages of animal draught power. [5marks]
[b] Discuss the importance of lubrication system in a tractor. [4marks]
[c] Explain six factors considered when selecting construction materials for farm structures . [6marks]
[d] Give five qualities of a good calf pen. [5marks]

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SECTION A (30 MARKS)
Answer All the questions in this section in the spaces provided

1. Differentiate between olericulture and pomoculture as used in crop production. (1 mk)
2. State **four** advantages of drip irrigation. (2 mks)
3. State **four** advantages of adding organic manure to a sandy soil. (2 mks)
4. State **four** advantages of applying lime as a measure of improving soil condition. (2 mks)
5. Define the following terms as used in agricultural economics.
   a) Gross Domestic Product (GDP) (½ mk)
   b) Per capita income (½ mk)
6. State **four** benefits of budgeting to a farm manager. (2 mks)
7. State f**our** activities carried out by Young Farmers Clubs in Kenya. (2 mks)
8. Distinguish between intensive hedgerow and border planting forms of agroforestry. (2 mks)
9. Give **four** reasons why land should be prepared early in readiness for planting. (2 mks)
10. State **four** reasons for intercropping. (2 mks)
11. Outline **two** conditions under which the opportunity cost is zero in a farming enterprise. (1 mk)
12. List **four** types of financial books a farmer should keep. (2 mks)
13. a) State **two** reasons for treating water before use in a farm. (1 mk)
    b) Give **two** methods of storing water in a farm. (1 mk)
14. a) List **four** disadvantages of communal land tenure system. (2 mks)
    b) Outline **four** aspects of rainfall that affect agricultural production. (2 mks)
15. a) State **four** human factors that affect agriculture. (2 mks)
    b) State **two** characteristics of a good root stock for grafting. (1 mk)

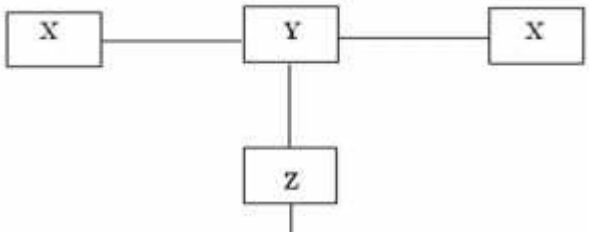
SECTION B (20 MARKS)

16. The transaction below shows Mr. Maginga's financial position in his farm business for the year 2004

Purchase of pesticides	Kshs 3,000
Milk sales	Kshs 8,000
Sale of goats	Kshs 5,000
Closing valuation	Kshs 16,000
Interest payable	Kshs 1,750
Veterinary bills	Kshs 1,400
Opening valuation	Kshs 12,000
Wages	Kshs 10,000
Depreciation of machinery	Kshs 3,000
Sale of one heifer	Kshs 1,000

Prepare a profit and loss account for Mr. Maginga's farm. (5 mks)

17. The diagram below illustrates a method of preparing compost pit manure, study the diagrams and answer the questions that follow.



a) Identify the method illustrated (1 mk)
b) By using arrows between the boxes indicate the direction of movement of materials from X to the field. (2 mks)
c) i) In regard to Y what is the volume of X? (1 mk)
   ii) How long should the materials stay in X and Y. (1 mk)

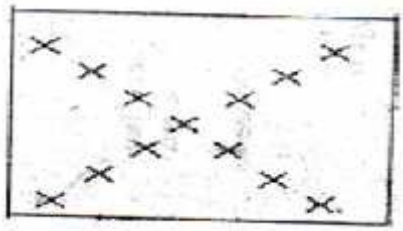
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18. The diagram below illustrates an arable field crop. Carefully study the diagram and answer the questions that follow.



a) Identify the field crop. (1 mk)
b) Name **two** common diseases that affects parts F and G. (2 mks)
c) List **four** cultural methods of controlling the diseaseas named in (b) above. (2 mks)

19. The diagram below shows a method of soil sampling.



a) Identify the method. (1 mk)
b) Mention **four** areas to avoid when sampling soil. (2 mks)
c) Give **two** reasons for soil testing. (2 mks)

SECTION C (40 MARKS)

Answer any TWO questions from this section in the spaces provided after question 22.

20. Describe various measures that can be carried out in a crop field to control crop diseases. (20 mks)
21. a) Explain the soil conservation measures that can be used to conserve soil on a sloping farmland (8 mks)
    b) Explain any **six** factors considered when spacing crops. (12 mks)
22. Describe the establishment of cabbage under the following subheadings.
    a) Nursery establishment and management (8 mks)
    b) Land preparation (4 mks)
    c) Transplanting (8 mks)

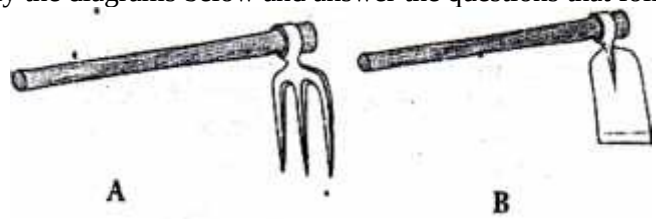
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PAPER 2

SECTION A (30 MKS)
Answer all the questions in this section in the spaces provided

1. Name **four** breeds of dairy goats (2 mks)
2. Name **one** intermediate host for each of the following livestock parasites.
   a) Liverfluke (Fasciola Spp) (1 mks)
   b) Tapeworm (Taenia Saginata) (1mk)
3. Name **four** systems of a tractor engine. (2 mks)
4. Give **four** reasons for feeding a lamb on colustrum. (2 mks)
5. Give **two** causes of scouring in calves. (1 mk)
6. Outline **four** limitations of using hydroelectric power on the farm. (2 mks)
7. Give **four** main causes of livestock diseases. (2 mks)
8. State **four** factors that would determine maintenance ration in livestock production. (2 mks)
9. Give **two** uses of foot bath in a plunge dip. (1 mk)
10. Give **two** reasons why dehorning is done in livestock. (1 mk)
11. Name the tool used together with each of the following tools. (1 mk)
    a) Canula -
    b) Wood chisel -
12. State **four** non-chemical ways of controlling ticks (2 mks)
13. List **four** qualities considered when selecting eggs for incubation. (2 mks)
14. Mention **three** purposes of branding in cattle (1½ mks)
15. Differenciate between crutching and ringing in livesock management. (1 mk)
16. Name **three** methods used in selection of livestock. (1½ mks)
17. State **two** reasons for including roughage in the ration of non-ruminant. (1 mk)
18. Give **four** signs of heat in a rabbit. (2 mks)
19. List **two** material used in construction of a green house. (1 mk)

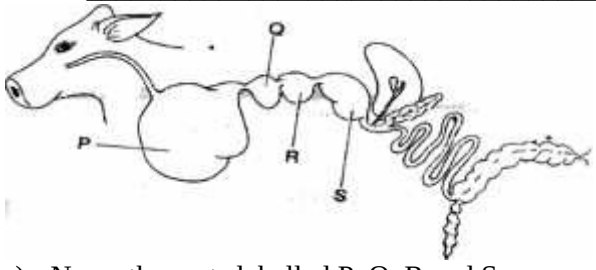
SECTION B (20 MARKS)
Answer all questions in this section in the spaces provided.

20. Study the diagrams below and answer the questions that follow.



    a) Identify tool A and B (2 mks)
    b) Under what conditions would you require to use tool A rather than tool B. (2 mks)
    c) State **two** maintenance practices for the above tools. (2 mks)

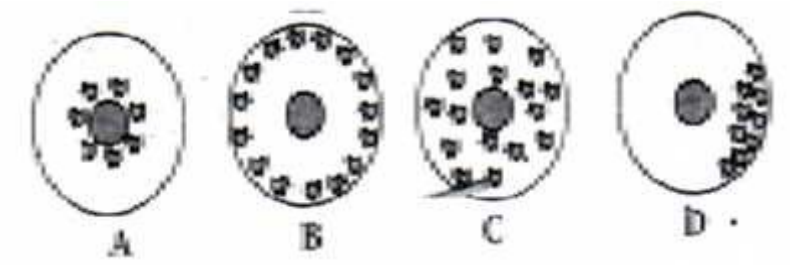
21. Study the diagram of the digestive system of a farm animal shown below and answer the questions that follow._____



    a) Name the parts labelled P, Q, R and S. (2 mks)
    b) State the funcion of the part labelled R. (1 mk)
    c) Give **two** reasons why livestock with the above parts are able to digest cellulose food material. (2 mks)

d) In which parts labelled P, Q, R and S would a nylon paper be found if fed on by an animal with the above digestive system? (1 mk)

22. The following illustrations show the behaviour of chicks at different temperatures in a brooder.



a) Explain the temperature conditions in each of the above diagrams: A, B, C and D. (4 mks)
b) State any **four** requirements of a good brooder. (4 mks)

SECTION C (40 MKS)

Answer any two questions from this section

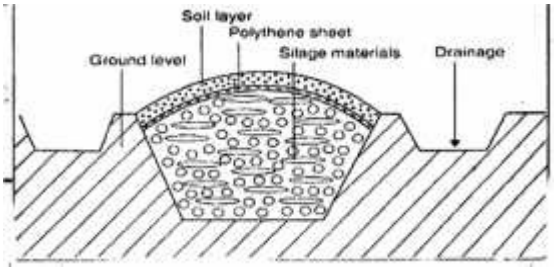
23. a) Differenciate between stress and vice in chicken (2 mks)
    b) How would a farmer control stress and vice in poultry. (10 mks)
    c) Describe the procedure of processing wax from honey combs. (8 mks)
24. a) Explain the types of stores that can be found on a farm (6 mks)
    b) Explain **three** routine livestock feeding practices carried out when rearing livestock. (6 mks)
    c) Describe **four** advantages and **four** disadvantages of using animal power in the farm. (8 mks)
25. Discuss the factors to consider when selecting a breeding stock. (20 mks)

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1. State **three** properties of soil that are influenced by its texture (1 ½ mks)
2. Give **two** ways in which pastures are classified (1mk)
3. Suppose a farmer has to apply 30kg of P_2 0_5 per hectare and he had the fertilizer labelled 21:15:60 at this disposal, calculate the amount of P_2 0_5 he will require for two hectare of land (2mks)
4. State **two** main causes of silage loses (1mk)
5. Give the element whose deficiency in plants is plants is characterised by the following
   (a) Interveinal chlorosis of the leaves ..... (½ mk)
   (i) Blossom end rot in tomatoes ..... ($^1/_2$mk)
   (ii) Scorched edges of a leaf ..... (½ mk)
6. State **four** characteristics of intensive farming (2mks)
7. Name **four** books of account kept by a farmer (2mks)
8. State **two** importance of flooding water in the field of growing rice (1mk)
9. List **four** four reasons for using certified planting materials (2mks)
10. State **four** aims of land settlement programmes in Kenya (2mks)
11. State **two** causes of forking in carrots (1mk)
12. State **four** disadvantages of using herbicides (2mks)
13. Name **two** common diseases of cabbages (1mk)
14. State **two** methods used in frame formation in tea production (2mks)
15. State **four** factors that influence mass wasting as a type of soil movement (2mks)
16. State **two** importance of living organisms in soil (1mk)
17. State **four** ways in which trees help in land reclamation (2mks)
18. State **four** factors that determine crop population in maize field (2mks)
19. State **four** agricultural services available to a crop farmer (4mks)

SECTION B (20 MKS)
Answer all questions in this section in the spaces provided

20. The diagram below show a method of forage preservation



(a) Identify the structure illustrated above..... (1mk)
(b) Give the role of each of the following in the above structure
   (a) Polythene sheets ..... (½ mk)
   (b) Drainage ..... (½ mk)
(c) State **two** other methods of forage conservation (2mks)

19. The following accounts of information is from Mr. Browns farm for the year ended 31/12/2013

Opening Valuation	Kshs. 6000
Paid Wages	Kshs. 5000
Bought equipments	Kshs. 4000
Sold mature pigs	Kshs. 7000
Bought drugs	Kshs. 3200
Sold maize	Kshs. 3000
Closing valuation	Kshs. 4000

(i) Using the information above, prepare a profit and loss account for Mr. Brown's farm (4mks)
(ii) From the calculation in

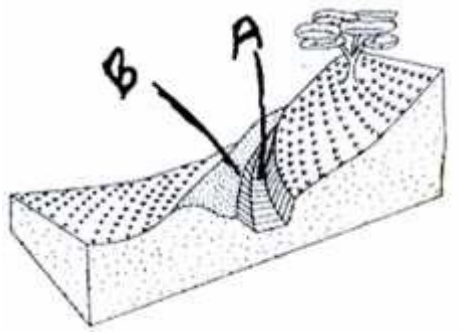
(i) above, state whether Mr. Brown made profit or loss (1mk)

22. The diagrams P, Q, R represents some crop pests, study them



(a) Identify the pests P and Q (1mark)
(b) Give the damage caused by pests P in maize production (1mk)
(c) State **two** control measures of pests R (2mks)

23. The illustration below shows a certain structure used in soil and water conservation, use it to answer the questions below



(a) Identify the structure (1mk)
(b) Name the parts of the structure labelled A and B (1mk)
(c) State other **two** physical structural methods used in soil and water conservation (2mks)

24. The diagram below illustrates some weeds. Study them and answer the questions that follows



(a) Identify the weeds (1mk)
(b) On the basis of plant morphology , classify the weed labelled L (1mk)
(c) Give **two** harmful effects of the weed labelled M (2mks)

SECTION C (40marks)

Answer any two questions in the spaces provided

25 (a) Describe the advantages of mixed grass -legume pasture over a pure grass pasture (5mks)
(b) Describe factors that should be considered when deciding on the crop to grow (10mks)
(c) Outline **five** advantages of using seeds for crop propagation (5mks)

26 (a) State **four** disadvantages that a farmer experience when they use synthetic type of mulches (4mks)
(b) Explain the different physical methods used in crop pest control (16mks)

27 (a) Outline the role of phosphorous in plants (5mks)
(b) Describe the policies used by the government to regulate the amount of imported agricultural good in Kenya (5mks)
(c) Describe uses of farm records in the farm (10mks)

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SECTION A (30 MARKS)

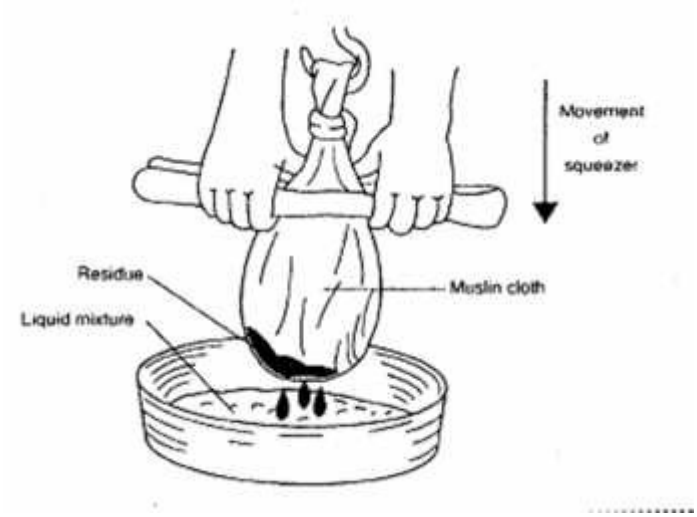
Answer ALL questions in this section in the space provided

1. Name **three** methods of selecting livestock (1½ mk
2. State **four** structural requirements if a calf pen (2mks)
3. State **four** practices that farmer should carry out to reduce egg eating in poultry (2mks)
4. State **three** mechanical methods of controlling ticks ($1^1/_2$mks)
5. Give **two** physical characteristics of saddle back breed of pigs (1mk)
6. List **two** uses of clutch in a tractor (2mks)
7. State **four** predisposing factors of scours in calves (2mks)
8. State **four** demerits of live fences (2mks)
9. State **four** qualities of good creep feed (2mks)
10. Give **three** methods of treating timber for building construction (1½ mks)
11. State **three** qualities of good livestock ration (1½ mks)
12. List **two** sources of farm power that are environmental friendly (1mk)
13. State **four** factors that would contribute to depreciation of farm tools and equipments (2mks)
14. State **four** practices carried out on the fish before preservation (2mks)
15. State **four** methods of maintaining good health in livestock (2mks)
16. State **four** causes of stress in flock of birds (2mks)
17. What is meant by dry cow therapy as used in agriculture (1mk)
18. Distinguish between pen mating and flock mating in poultry management (2mks)

SECTION B (20 MKS)

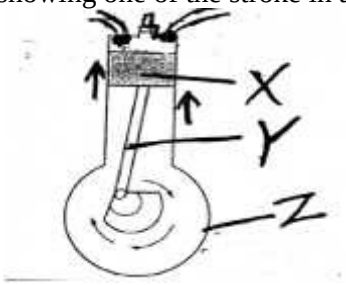
Answer all questions in this section in the spaces provided

19. Study the diagram below and answer the questions that follow



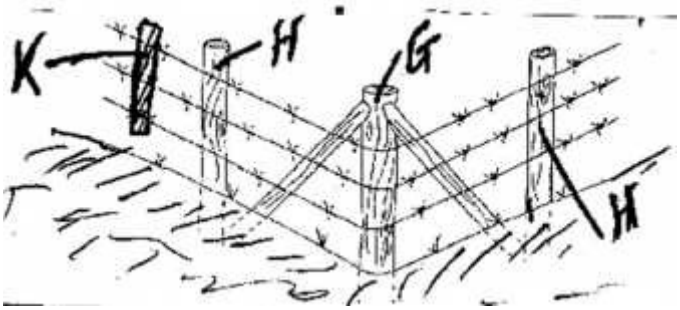
(a) Identify the method illustrated above (1mk)
(b) Name **two** alternative methods of obtaining the product other than the one illustrated above (1mk)
(c) State **two** factors that determine the quality of the product given in the above illustration (2mks)

20. Below is a diagram showing one of the stroke in a tractor engine . Use it to answer the questions that follow



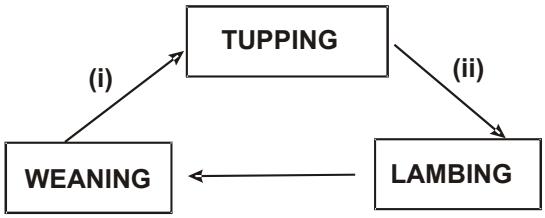
(a) Identify the stroke ..... (½ mk)
(b). Name the parts labelled (1½ mk)
(c) Briefly describe the stroke in (a) above (2mks)

21. Below is a diagram of farm structure .Study it and answer the questions that follow



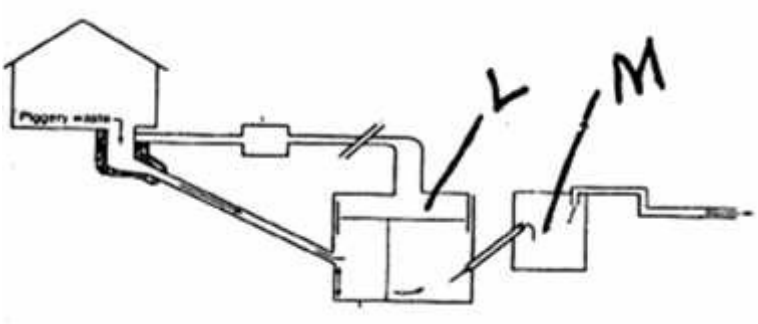
(a) Identify the structure illustrated above. (1½ mk)
(b) Name the parts labelled G, H & K
(c) State **two** maintenance practices carried out on the farm structure above (2mks)

22. Below is a breeding cycle of a ewe in relation to its feeding use it to answer the questions that follow



(a) Which practices are shown by: -
(b) State **two** importance of practice (ii) above (2mks)

23 Study the diagram below of a biogas plant and answer the questins that follow



(a) Name the main component of biogas that is trapped in part L (1mk)
(b) Give the name and use of the materials deposited in part labelled M (1mk)
(c) State **two** uses of Biogas on the farm (2mks)

SECTION C (40 MARKS)

Answer Two questions in this section in the spaces provided

24. (a) State **five** reasons for keeping livestock healthy (5mks)
(b) Describe Newcastle disease under the following subheading
(i) Casual organism (1mk)
(ii) Signs of attack (7mks)
(iii) Control measures (2mks)
(c) Describe **five** microbial activities that take place in the rumen of ruminant animals. (5mks)
25. (a) Outline **five** advantage of artificial insemination (5mks)
(b) Describe factors that affect digestibility of feed in livestock (5mks)
(c) Describe the differencies between Petrol and diesel engines (10mk)
26. Give **five** harmful effects of liver flukes in sheep (5mks)
(b) Describe uses of fences in the farm (10mks)
(c) State **five** functions of water in farm body of dairy animals (5mks)

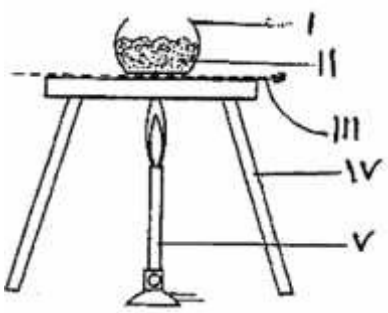
KCSE PREDICTION 9 2022
Kenya Certificate of Secondary Education (K.C.S.E)
443/1
AGRICULTURE
PAPER 1

SECTION A: (30 MARKS)
Answer all questions in this section in the spaces provided.

1. What is agroforestry? (1 mark)
2. Give **two** roles of agriculture in industrial growth. (1 mark)
3. Differentiate between intercropping and mixed cropping. (1 mark)
4. Name **four** financial documents used in the farm. (2 marks)
5. Give **four** types of micro catchments used in the farm. (2 marks)
6. State **four** sources of soil acidity. (2 marks)
7. State **two** advantages of carrying out pruning in banana production. (1 mark)
8. Given that a price of Ksh.100 per bag, 20 bags of maize are demanded, but when the price changes to Ksh.80 per bag, 22 bags are demanded. Calculate the elasticity of demand. (½ mark)
9. In maize hybrid 614 what do the following figures stand for? (1 mark)
   (i) 6
   (ii) 4
10. Give **two** ways in which pastures are classified. (1 mark)
11. State **four** properties of soil influenced by its texture. (2 marks)
12. Explain the meaning of the following terms as used in agricultural economics. (1 mark)
    (i) Production function.
    (ii) Equimarginal returns
13. Name **four** practices carried out to improve and maintain permanent pasture. (2 marks)
14. List **two** features of plastic pipes a farmer should consider before buying. (1 mark)
15. Give **four** advantages of tissue culture. (2 marks)
16. Give **three** stages of controlling devils horsewhip by mechanical means. (1½ marks)
17. State **four** functions involved on marketing of cabbages. (2 marks)
18. A farmer was advised to apply 40kg, P_2O_5 per hectare of maize at planting time. The phosphatic fertilizer available was single superphosphate containing 20% P_2O_5.
    (i) Calculate how much single superphosphate fertilizer she should apply in two hectares. (2 marks)
19. State **three** situation when the opportunity cost is zero. (1½ marks)
20. State **four** steps of gulley formation. (2 marks)
21. Define what a partial budget. (½ mark)

SECTION B: (20 MARKS)
Answer all questions in this section in the spaces provided.

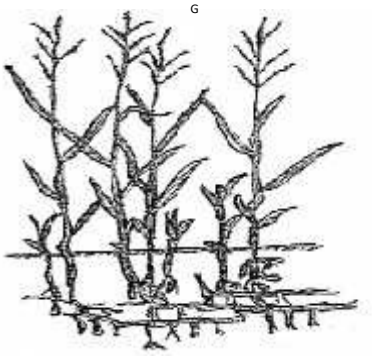
22. The diagram below shows a set up of apparatus for finding the percentage of humus contents in a soil by ignition.



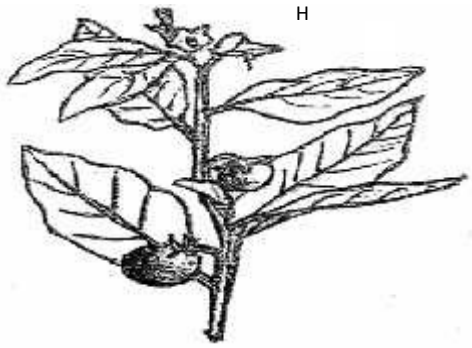
    (a) Label the apparatus. (2 marks)
    (b) Outline the steps followed in carrying out the illustrated experiment. (3 marks)
23. The following symptoms were noted on tomato seedlings in a farm.
    (a) Stem cankers on seedlings.
    (b) Spots on the seedling leaves.
    (c) Defoliation and falling of leaves.
        (i) Name the disease affecting the crops. (1 mark)
        (ii) State a cause of the disease. (1 mark)
        (iii) State **three** control measures for the disease. (3 marks)

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24. G

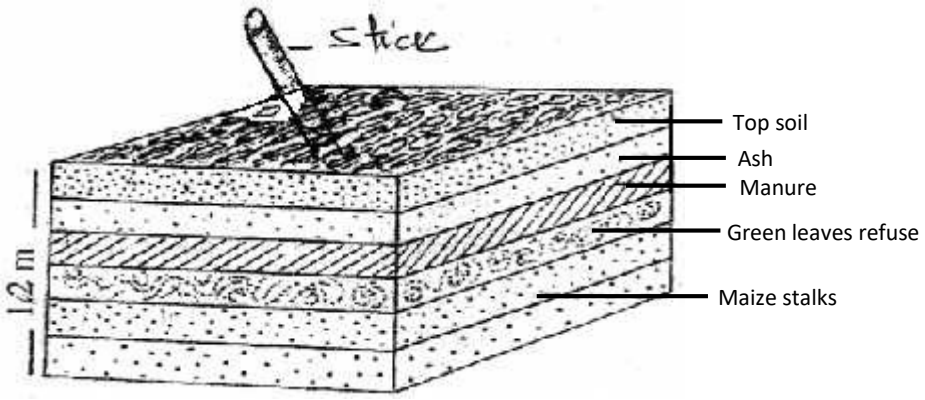


H



(i) Identify the weeds. (2 marks)
(ii) State the economic importance of the weed shown in diagram **G**. (2 marks)
(iii) Why is it difficult to control weed in diagram **G**? (1 mark)

25. The diagram below shows preparation of organic manure.



(a) Which type of organic manure is being prepared above? (1 mark)
(b) Give the importance of inclusion of the following layers. (4 marks)
(i) Ash
(ii) Topsoil
(iii) Manure
(iv) A stick

SECTION C: (40 MARKS)

Answer any two questions from the section.

26. (a) Describe five objectives of agricultural research in Kenya. (10 marks)
(b) Describe ten cultural methods used to control pest. (10 marks)

27. (a) (i) What is open valuation? (2 marks)
(ii) What is closing valuation? (2 marks)
(iii) When is profit and loss account prepared? (1 mark)
(b) Prepare a profit and loss account ending 31st Dec, 2003 using the following information. The farm made the following transactions. Purchased items listed below. (10 marks)

Items	Kshs.
Seed and fertilizer	3600
Fuel worth	3400
Livestock feeds	3000
Machinery implements	60000

The farm also expected the following:-
Kshs.5400 for vegetables sold to a neighbour school; Kshs.20,000 for beans sold, Kshs.10,000 for milk delivered to K.C.C. Kshs.46000 for coffee sold to local cooperative society. The farms opening valuation was Kshs. 80,000 and the closing valuation was Kshs.120,000.
(i) Did the farm make a profit or loss? (1 mark)
(ii) How much profit or loss did the farm make? (2 marks)
(iii) Calculate the percentage profit of loss made. (2 marks)

28. (a) Discuss the human factors which influence agriculture. (10 marks)
(b) Explain **five** factors to consider when choosing the planting time. (10 marks)

Kenya Certificate of Secondary Education (K.C.S.E)
443/2
AGRICULTURE
PAPER 2

SECTION A: (30 MARKS)

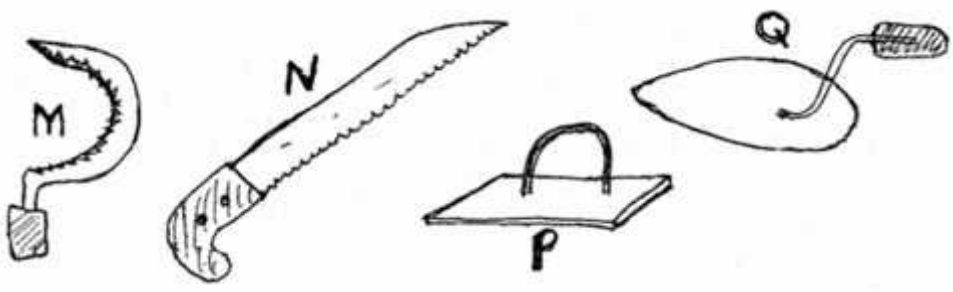
Answer all questions in this section in the spaces provided.

1. Define the following terms as used in Agriculture.
   (i) Brooding in poultry. (1 mark)
   (ii) Flushing. (1 mark)
2. Give **four** advantages of carrying out raddling in sheep management. (2marks)
3. What is compression ratio? (½ mark)
4. Dorper breed of sheep breed was developed from two breed. Name them. (1 mark)
5. State **four** physiological parameters that can be used as indicators of ill health in livestock. (2 marks)
6. Outline **four** factors that should be considered when siting farm building and structures. (2 marks)
7. State the predisposing factors of the following livestock disease.
   (a) Coccidiosis in poultry. (½ mark)
   (b) Gumboro disease in poultry. (½ mark)
8. Name **four** light breeds in poultry. (2 marks)
9. State **four** functions of water in animal's body. (2 marks)
10. Give **three** functions of carburetor in a tractor. (1½ marks)
11. State when it is necessary to use a jembe instead of a plough. (2 marks)
12. (a) Give an intermediate host for the following internal parasites.
    (i) Taenia saginate. (½ mark)
    (ii) Taenia solium. (½ mark)
    (b) State **four** effects of parasites on host. (2 marks)
13. Define the following terms as used in animal production.
    (i) Epistasis. (1 mark)
    (ii) Heterosis (Hybrid vigour). (1 mark)
14. Give **four** reasons why farm tools should be properly maintained. (2 marks)
15. State **four** advantages of natural calf rearing. (2 marks)
16. State **three** importance of seasoning timber. (1½ marks)
17. State **three** functions of an egg shell. (1½ marks)

SECTION B: (20 MARKS)

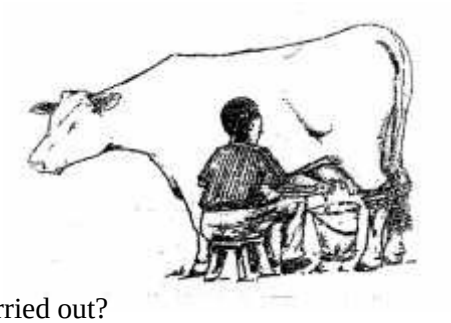
Answer all questions in this section in the spaces provided.

18. Diagram **M**, **N**, **P** and **Q** represent farm tools.



   (a) Identify the tools. (2 marks)
   (b) Give the use of each of the tools named above. (2 marks)
   (c) State **two** maintenance practices that should be carried out on tool M. (1 mark)
19. A cow was diagnosed with the following symptoms, swollen feet, animal walking with limping gait, lameness and pus with rotten smell oozing out of the hooves and animals spending most time lying down.
   (a) Suggest the disease the animal was suffering from. (½ mark)
   (b) Name the possible cause of the above disease. (½ mark)
   (c) Apart from cattle name other two farm animals attacked by the above disease. (2 marks)
   (d) State **four** control methods of the disease. (2 marks)

20. Below is an illustration of a farm operation. Study it carefully and answer the questions that follow.



(i) What activity is being carried out? (½ mark)
(ii) Give **three** activities carried out on the animal before the above operation. (1½ marks)
(iii) Outline the procedure of carrying out operation. (3 marks)

21. (a) Define the term digestible crude protein. (1 mark)
(b) A farmer wanted to prepare 200kg of calf rearing ration containing 20% DCP. Using the pearsons square method, calculate the amount of maize containing 10% DCP and sunflower containing 35% DCP the farmer would need to prepare the ration. (Show your working). (4 marks)

SECTION C: (40 MARKS)

Answer any two questions from the section.

22. (a) Describe ten general methods of disease control in livestock. (10 marks)
(b) Describe the advantages of fences. (10 marks)
23. (a) Describe the principle of operation of four stroke (four cycle) petrol engine. (8 marks)
(b) Describe the rearing of fresh water fish in artificial ponds under the following subheadings.
(i) Types of fish reared. (2 marks)
(ii) Stocking of the pond. (3 marks)
(iii) Practices done to increase fish yield. (4 marks)
(iv) Cropping of fish. (3 marks)
24. (a) Give **ten** general characteristic of beef cattle. (10 marks)
(b) Describe the management of deep litter horse. (10 marks)

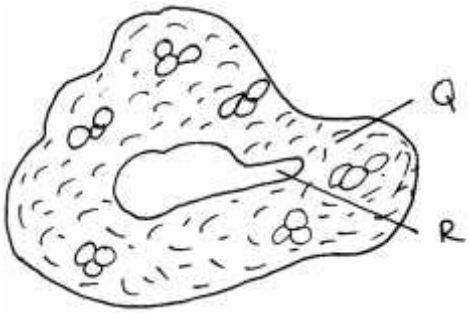
KCSE PREDICTION 10 2022
Kenya Certificate of Secondary Education (K.C.S.E)
443/1
AGRICULTURE
PAPER 1

SECTION A: (30 MARKS)
Answer all questions in this section in the spaces provided.

1. State **four** reasons for practicing agro forestry in Kenya. (2 marks)
2. State **four** disadvantages of organic mulching. (2 marks)
3. (a) What is stooking as used in maize production? (1 mark)
   (b) State the importance of stooking. (1 mark)
4. Why is per capita income not a good measure of economic performance of a country? (1 mark)
5. What is the use of a delivery note in farm accounts? (1 mark)
6. State **four** objectives of agricultural research. (2 marks)
7. Outline **four** factors considered when designing a crop rotation programme. (2 marks)
8. Outline **six** advantages of land consolidation. (3 marks)
9. State **four** factors influencing soil erosion. (2 marks)
10. Outline **four** conditions that necessitate irrigation. (2 marks)
11. Name **four** variable inputs in a maize production enterprise. (2 marks)
12. State **six** factors that affect the quality of hay. (3 marks)
13. Outline **two** reasons why a legume should be included when establishing forage crops. (1 mark)
14. State **four** advantages of tillage as a method of weed control. (2 marks)
15. Name **three** environmental factors affecting the effectiveness of herbicide. (3 marks)

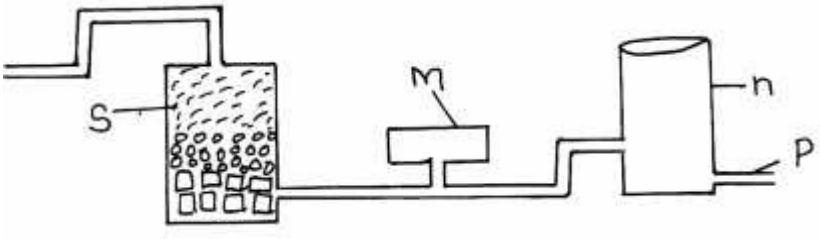
SECTION B: (20 MARKS)
Answer all the questions in the spaces provided.

16. Below is an illustration of a soil structure. Study it carefully and answer the questions beneath.



   (a) Identify the type of soil structure illustrated above. (½ mark)
   (b) Name the parts labeled. (2 marks)
   (c) Name **two** areas where the structure is common within the soil profile. (2 marks)

17. The illustration below represents the last stages of a water treatment system. Study it carefully and answer the questions beneath.



   (a) Name the parts labelled. (1 mark)
   M ,n
   (b) State one importance of: P, S (2 marks)
   (c) Briefly explain what happens to water as it passes through "M". (2 marks)

18. Study the method of pruning illustration below and answer the questions that follow.



(a) Identify the method of pruning illustration above. (½ mark)
(b) Give a reason as to why the management practice is carried out. (1 mark)
(c) Name **two** crops onto which the practice is applicable. (2 marks)
(d) Name **two** other methods of pruning field crop. (2 marks)

19. (a) State **four** factors considered in choosing the planting time. (2 marks)
(b) State **two** advantages of early planting. (2 marks)
(c) State **one** disadvantage of early planting. (1 mark)

SECTION C: (40 MARKS)
Answer any two questions in this section in the spaces provided after.

20. (a) Briefly describe the agricultural services available to the farmers. (10 marks)
(b) (i) What is farm Budgeting. (1 mark)
(ii) Name **two** types of farm Budget. (1 mark)
(c) A farmer intends to change his enterprise from livestock production to crop production. The cost incurred is as follows.

The cost of livestock production includes.

- Cost of cow Kshs.15,000
- Fencing Kshs. 3,000
- Disease control Kshs. 1,000
- Milk man wager Kshs. 5,000
- Spraying costs Kshs. 500

The cost of crop production includes.

- Land preparation Kshs. 500
- Seeds Kshs. 600
- Planting Kshs. 800
- Fertilizers Kshs. 1,500
- Disease/pest control Kshs. 1,200
- Harvesting Kshs. 1,100

The revenue from milk sale is Ksh.25,000 and sale of calf Ksh.4,000 while the revenue he gets from sale of crops is Ksh.23,000. Draw up a partial budget and indicate whether the change is worthwhile or not. (8 marks)

21. (a) Describe the various methods of drainage. (10 marks)
(b) State and explain **five** factors which influence pesticide efficiency. (10 marks)

22. Discuss the production of nappier grass under the following subheadings.
(i) Seedbed preparation. (4 marks)
(ii) Planting (5 marks)
(iii) Fertilizer application. (3 marks)
(iv) Weed control. (3 marks)
(v) Utilization. (5 marks)

Kenya Certificate of Secondary Education (K.C.S.E)
443/2
AGRICULTURE
PAPER 2

SECTION A: (30 MARKS)

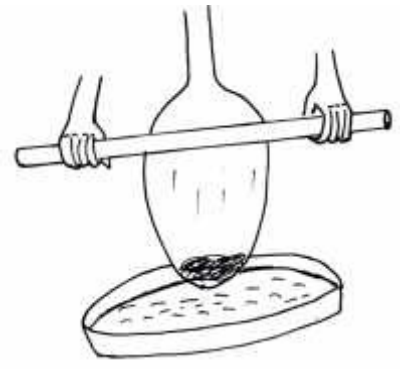
Answer all questions in this section in the spaces provided.

1. State **four** reasons that may discourage dairy farming in Kenya. (2 marks)
2. Outline **four** maintenance practices of a hack saw. (2 marks)
3. Name **two** methods used in disbudding. (1 mark)
4. Define line breeding. (1 mark)
5. Name **four** methods used in preserving fish. (2 marks)
6. Name **four** sources of carbohydrates in livestock nutrition. (2 marks)
7. What is the effect of increasing the tractor speed on the cut slice when using a disc plough? (1 mark)
8. Outline **four** routes through which disease Causing organisms get into the body of an animal. (2 marks)
9. Outline **three** precautions a farmer should take to avoid infection by brucellosis. (3 marks)
10. Highlight **three** reasons for keeping feeding records. (3 marks)
11. State **four** advantages of natural feeding in calf rearing. (2 marks)
12. Highlight **four** factors that affect maintenance requirements of an animal. (2 marks)
13. Name **two** developmental stages of a liver fluke. (1 mark)
14. State **four** reasons for feeding young calves on colostrum. (2 marks)
15. State **four** components of power transmission system. (2 marks)
16. State **four** factors that stimulate milk let down in a lactating cow. (2 marks)

SECTION B: (20 MARKS)

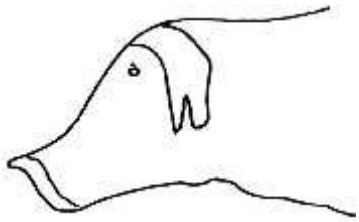
Answer all the questions in the spaces provided.

17. Study the illustration of processing honey below and answer the question that follow.



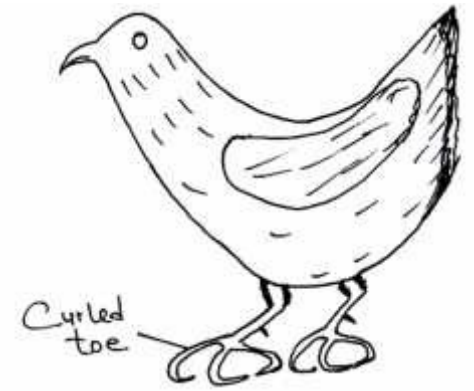
(a) Name the part labelled. (2 marks)
(b) State the function of part labelled **S**. (1 mark)
(c) State **four** equipments used for harvesting honey. (2 marks)

18. The diagram below represents a method of livestock nurture management practice. Study it carefully and answer the questions beneath/below.



(a) Identify the management practice represented above. (1 mark)
(b) Name the farm tool used to carry out the management practice. (1 mark)
(c) State **one** major precautionary measure taken when carrying out the above management practice. (1 mark)
(d) Name **four** livestock animals which the management practice is carried out. (1 mark)

19. Study the illustration below and answer the question beneath.



(a) What causes curled toes? (1 mark)
(b) State **two** other deficiency symptoms besides curled toe paralysis. (2 marks)
(c) State **four** sources of vitamin B_2. (2 marks)

20. Animal power is a common means of transport in our country.
(a) Briefly explain the mechanism involved to enable them perform this practice. (3 marks)
(b) State **two** major factors which determine animals power efficiency. (2 marks)

SECTION C: (40 MARKS)

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

21. (a) Explain the reasons for feeding livestock on a balanced ration. (6 marks)
(b) Describe the preparation and management of natural incubation. (9 marks)
(c) Describe the body conformation features of a beef cattle. (5 marks)

22. (a) What are the advantages of farm mechanization. (5 marks)
(b) State **four** maintenance practices of a tractor battery. (4 marks)
(c) Describe parts of a disc plough. (5 marks)
(d) State the disadvantages of animal drawn implements as compared to tractor drawn implements. (6 marks)

23. (a) Outline **three** factors to consider when siting a calf pen. (3 marks)
(b) Name and describe the features of an ideal calf pen. (3 marks)
(c) What factors should a farmer consider when selecting materials for constructing a dairy cattle shed. (10 marks)

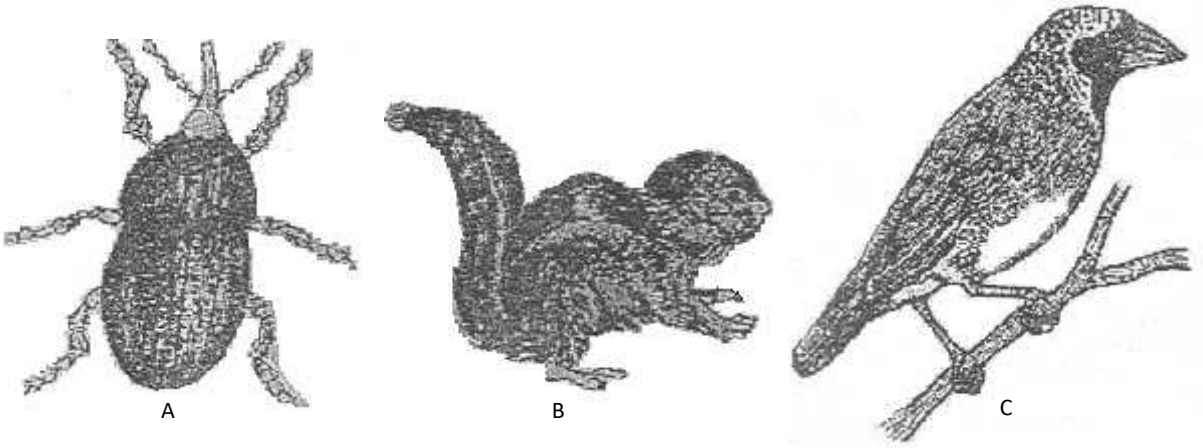
KCSE PREDICTION 11
Kenya Certificate of Secondary Education
443/1
AGRICULTURE
PAPER 1

SECTION A: (30 MARKS)
Answer all questions in this section in the spaces provided.

1. Agriculture is viewed as an Art and a Science. State **four** practice in the farm that makes Agriculture an Art. (2 marks)
2. State **four** ways in which a farmer can improve the structure of a water logged clay soil. (2 marks)
3. Despite efficient water supply to his tomatoes, Mr. Gikandi still noted wilting of some plants. Suggest **two** possible causes of this wilting. (1 mark)
4. Outline the stages undergone in the development of a gully. (2 marks)
5. (a) Explain why zone 2 in the zones of production is called a Rational Zone. (1 mark)
   (b) Differentiate between a complete budget and a partial budget. (1 mark)
6. (a) State **four** deficiency symptoms that would be seen in crop lacking potassium. (2 marks)
   (b) A farmer was advised to apply 150kg of CAN of maize. Calculate the amount of Nitrogen applied per Hectare if CAN contains 21%N. (1 mark)
7. List down **three** types of Nurseries. (1½ marks)
8. State **four** achievements that can be made with high level of education and technology in agriculture. (2 marks)
9. Name **four** examples of liabilities in a balance sheet. (2 marks)
10. State **four** ways in which a farmer can increase labour productivity in the farm. (2 marks)
11. Give **four** farming practices that may help in achieving minimum tillage. (4 marks)
12. State **four** reasons why timely weed control is advisable in cop production. (2 marks)
13. Give **two** forms of collective land tenure system in Kenya. (1 mark)
14. Define the term "Economic Injury Level" of a crop. (1 mark)
15. State **three** characteristics of shifting cultivation. (1½ marks)
16. Name the disease that is characterized by mass of dark spores on the flowering part of maize.

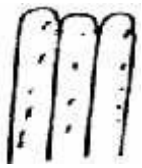
SECTION B: (20 MARKS)
Answer all the questions in this section in the spaces provided.

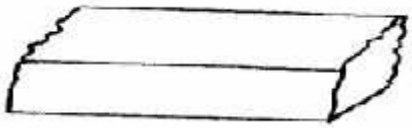
17. Three maize pests are shown in the diagram below. Study them and answer the questions that follow.

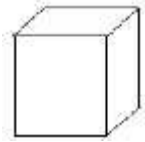


(a) Identify the pests in the diagrams labeled **A**, **B** and **C**. (2 marks)
(b) At what stage of maize production does pest **A** and **B** damage the crop? (2 marks)
(c) Give **two** ways in which **C** causes loses in field crops. (2 marks)

18. Study the following types of soil structures and answer the questions that follow.


A


B

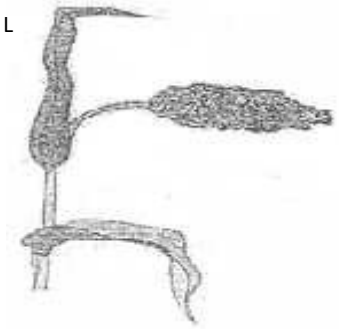

C


D

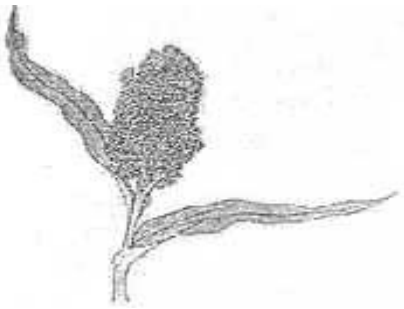
(a) Identify the type of soil structure labeled. (2 marks)
(b) Which type of soil structure is best suited for farming. (1 mark)
(c) Identify **four** characteristics which make the soil structure named in (b) above suitable for farming.(2 marks)

19. The diagram below shows panicles of two sorghum varieties. Study the diagrams and answer the questions that follow.

L



M



(a) Identify varieties **L** and **M**. (2 marks)
(b) Which of the two varieties of sorghum is less likely to be damaged by birds? (1 mark)
(c) Give a reason for your answer in (b) above. (1 mark)

20. Differentiate between a Hybrid and a composite as applied in maize production. (1 mark)
21. Why are the following weeds difficult to control?
(a) Couch grass. (1 mark)
(b) Oxalis latifolia. (1 mark)
(c) Double thorn. (1 mark)

SECTION C: (40 MARKS)

Answer any two questions in this section in the spaces provided after question 24.

22. (i) Explain **five** structural structures used to control soil erosion. (10 marks)
(ii) State and explain **five** factors which may influence the spacing of crops. (10 marks)
23. (a) Describe **ten** cultural methods used in controlling crops pests. (10 marks)
(b) Describe production of paddy rice under the following sub headings:
(i) Land preparation. (3 marks)
(ii) Water control. (3 marks)
(iii) Role of irrigation water. (3 marks)
(iv) Sighs of maturity. (1 mark)

24. Using the data below answer the questions that follow.
    (a) Work out the Marginal revenue, Marginal cost and Net revenue at all levels of production and complete the table. (7 marks)

Fertilizer input (Bags)	Maize output (Bags)	Total Revenue Kshs.	Total Cost Kshs.	Marginal Revenue Kshs.	Marginal Cost Kshs.	Net Revenue Kshs.
0	0	0	0	0	0	0
2	14	28000	5600	-	-	-
4	39	78000	11200	-	-	
6	61	122000	16800	-	-	-
8	78	156000	22400	-	-	-
10	87	174000	28000	-	-	-
12	88	176000	23600	-		

    (b) On the graph paper provided, draw a graph of output against input. (4 marks)
    (c) From the graph, work out the maize output at the input levels 3 and 9. (2 marks)
    (d) State the level of input where maximum profit is realized and give a reason. (2 marks)
    (e) What is elasticity of demand? (Ed) (1 mark)
    (f) Enumerate the factors that determine the elasticity of demand. (4 marks)

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443/2
AGRICULTURE
PAPER 2
JULY EDITION 2022

SECTION A: (30 MARKS)

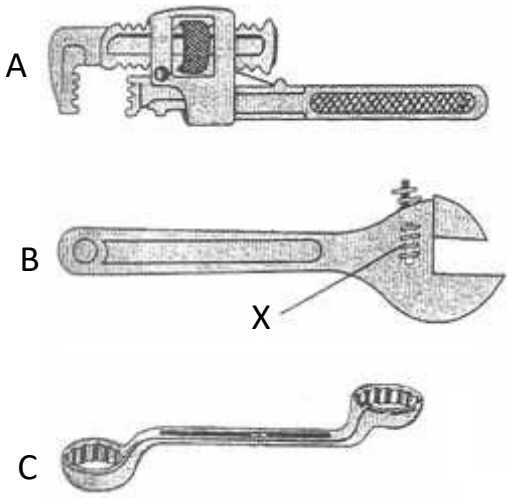
Answer all questions in this section in the spaces provided.

1. State the major physical difference between a Landrace and a Large White Pig. (2 marks)
2. (a) Name **two** livestock diseases that are controlled through use of same vaccine. (2 marks)
   (b) Name the vaccine as in 2 (a) above. (½ mark)
3. Name **two** diseases that attack bees. (2 marks)
4. State **two** distinguishing external characteristics of Californian White Rabbit. (2 marks)
5. State the functions of the following hormones in livestock.
   (a) Oxytocin. (1 mark)
   (b) Stilboesterol. (1 mark)
6. Name **four** species of fresh water fish reared in Kenya. (2 marks)
7. Give **three** methods of feeding colostrums to a Newly Born Calf. (1½ marks)
8. State **four** advantages of using Kenya Top Bar Hive over Log Hive. (2 marks)
9. List **four** factors that would ensure clean milk production. (2 marks)
10. State **two** reasons for clipping the Upper Beak in poultry management. (1 mark)
11. State **two** ways of preventing predation in a fish pond. (2 marks)
12. Differentiate between crutching and ringing. (1 mark)
13. Name **two** major physical differences between Dromedary and Bacterian Breeds of camel. (2 marks)
14. State **four** major Routes of Administering vaccines in a day old chick. (2 marks)
15. State **four** measures that prevent egg eating in poultry. (2 marks)
16. Give **four** factors determining the amount of water taken by an animal. (2 marks)
17. List **two** factors considered in sorting and grading eggs for market. (2 marks)
18. List any **four** predisposing factors of livestock diseases. (2 marks)
19. (a) Define the term immunity as used in livestock health. (1 mark)
    (b) List **four** causes of livestock diseases. (2 marks)
20. Name **two** structures used in the control of ticks. (1 mark)
21. (a) State **two** possible causes of soft shelled eggs. (1 mark)
    (b) State **two** qualities of good eggs for incubation. (1 mark)

SECTION B: (20 MARKS)

Answer all questions in this section in the spaces provided.

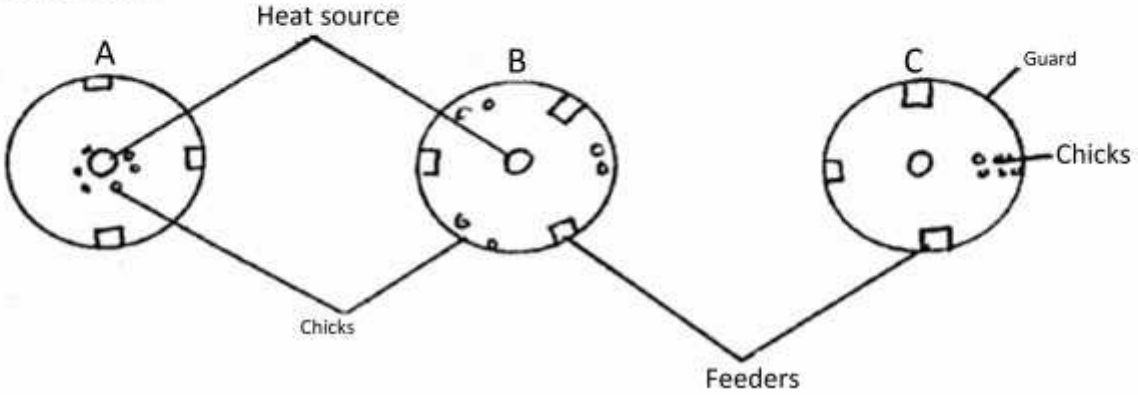
22. The diagram below show some workshop tools. Study the diagrams and answer the questions that follow.



FOR MARKING SCHEMES INBOX 0724351706

(a) Identify tools labelled. (3 marks)
(b) What functional advantage does the tool labelled **B** have over tool **C**? (1 mark)
(c) State the function of the tool labelled **A**. (1 mark)
(d) State the function of part **X** in the tool labelled **B**. (1 mark)

23. Below are diagrams illustrating the behaviour of chicks in various brooders. Study the diagrams and answer the questions that follow.



(a) State the environment problem in each brooder as illustrated by the behaviour of the chicks. (3 marks)
(b) State **one** way of solving the problem in B. (1 mark)

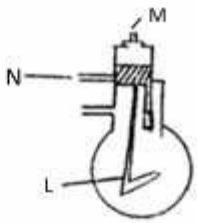
24. Study the illustration shown below and answer the questions that follow.



(a) Name the condition shown above. (1 mark)
(b) What causes the condition shown in **24(a)** above? (1 mark)
(c) Explain the treatment of the condition named in **24(a)** above. (2 marks)

25. A farmer computed 100kg ration with 20% DCP from oats which contains 10% DCP and simsim seed cakes containing 60% DCP. Using the Pearson Square method, calculate the amount of each feedstuff in the ration. (5 marks)

26. Below is a diagram of two stroke engine cylinder.



Name **one** farm machine where the above engine is used. (1 mark)

SECTION C: (40 MARKS)

Answer any two questions in this section in the spaces provided after question 29.

27. (a) Describe the management practices that should be carried out on a sow and piglets during the furrowing period. (12 marks)
(b) Explain **five** reasons why a breeding boar may be culled. (5 marks)
(c) State **four** maintenance practices of forked jembe. (3 marks)

28. (a) Describe how the transmission system of a tractor transmits power that is developed in a cylinder to the wheels for motion. (15 marks)
(b) Describe **five** long term tractor services and maintenances. (5 marks)

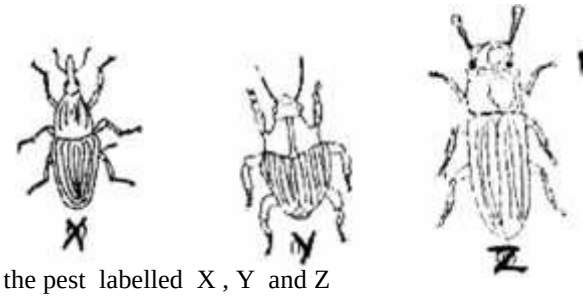
29. (a) State **six** features of an ideal calf pen. (6 marks)
(b) Describe the uses of fences in the farm. (8 marks)
(c) State **six** factors considered when siting farm structures. 0(6 marks)

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AGRICULTURE
PAPER 1
TIME: 2 HOURS

1. List **two** aspects of light that influence agriculture (1mk)
2. State **two** reasons why land settlements were established in Kenya (1mk)
3. Outline **two** methods used by farmers to harden-off seedlings in the nursery (1mk)
4. State ***four*** advantages of overhead irrigation (2mks)
5. State what is meant by the term "trap crop" as used in crop pest control (1mk)
6. Give **three** reasons for practising minimum tillage (1 ½ mks)
7. Name **two** insect pests that attack sorghum in the field (1mk)
8. State **two** conditions when opportunity costs are zero (1mk)
9. (a) .State **three** reasons for practising grafting in citrus production (1 ½ mks)
   (b) Give the method used in breaking seed dormancy in the following crops
   (i) Calliandra (½mks)
   (ii) Rice (½mks)
10. State **two** advantages of mixed pastures (1mk)
11. State **four** principles of co-operative societies in Kenya (2mks)
12. List **three** types of production functions (1½mks)
13. State **four** properties of soil that are influenced by its texture (2mks)
14. Outline **four** agricultural support services available to a livestock farmer (2mks)
15. Give **four** factors which influence solifluction (2mks)
16. List **four** factors that affect the selectivity of herbicides (2mks)
17. Give **two** types of product- product relationship in agriculture economics (1mk)
18. Outline the advantages of using certified seed in crop production (1 ½ mk)
19. Give **two** ways of utilizing napier grass as a forage crop (1mk)
20. Explain the following terms
    (i) Elasticity of demand (1mk)
    (ii) Elasticity of supply (1mk)

SECTION B (20 MARKS)
Answer all questions in the space provided

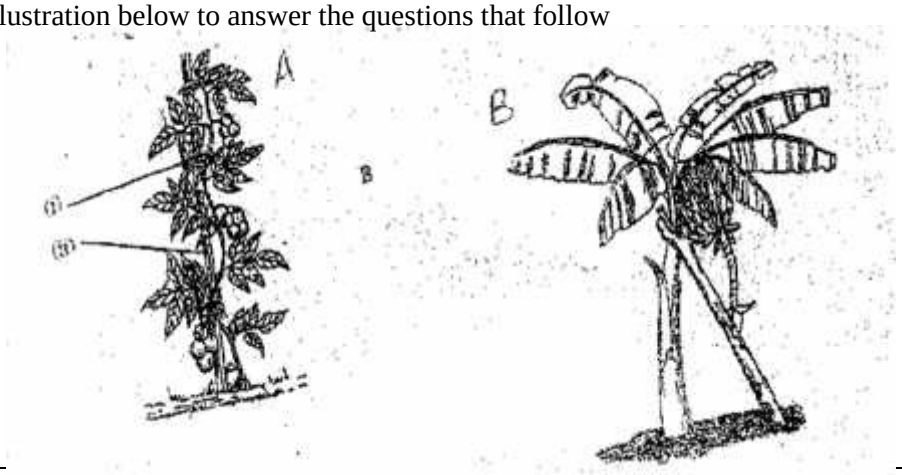
21. Below are diagrams of some storage pests. Use them to answer the questions that follows



(a Identify the pest labelled X , Y and Z ***(3mks)***

(b) State **two** groups of pests based on their mode of feeding ***(2mks***

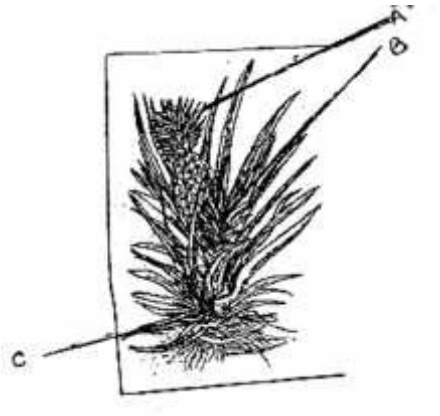
22. Use the illustration below to answer the questions that follow



FOR MARKING SCHEMES INBOX 0724351706

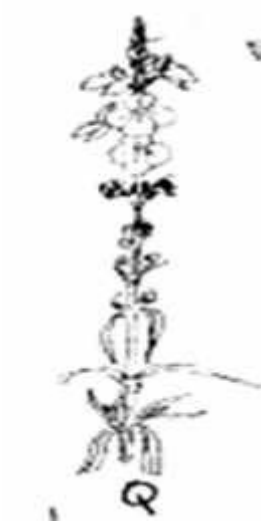
(a) Identify the practice illustrated in diagram A and B ***(2mks)***
(b) Give **three** reasons for carrying out the practice illustrated by A ***(3mks)***

23. Use the diagram below to answer the questions that follows



(a) Give the identity of the following parts (3mks)
(b) Give **two** ecological factors that influence the sweetness of the above fruit (1mk)
(c) Which of the parts labelled A, B and C is the best for propagation ? Give a reason (1mk)

24. Use the diagrams below of weeds to answer the questions that follow





(a) Identify weed P and Q (2mks)
(b) State **one** harmful effect in each case that is specific to each of the weeds P and Q to a farmer (2mks)
(c) Which is the most effective way of controlling weed Q (1mk)

SECTION C (40marks)

Answer any two questions from this Section in the spaces provided after question 27

25 (a) Explain various practices carried out in the field to control crop diseases (10mks
(b) Describe the steps followed when making silage (10mks)
26. (a) Explain **five** factors to consider in choosing the type of irrigation in the farm (10mks)
(b) State factors a farmer should consider before deciding to use chemical as a pest control method (5mks)
(c) Explain reasons for land fragmentation (5mks)
27. (a) Outline **ten** marketing functions (10mks)
(b) Explain why timely weed control is advisable in crop production (5mks)
(c) Give reasons for pruning coffee (5mks)

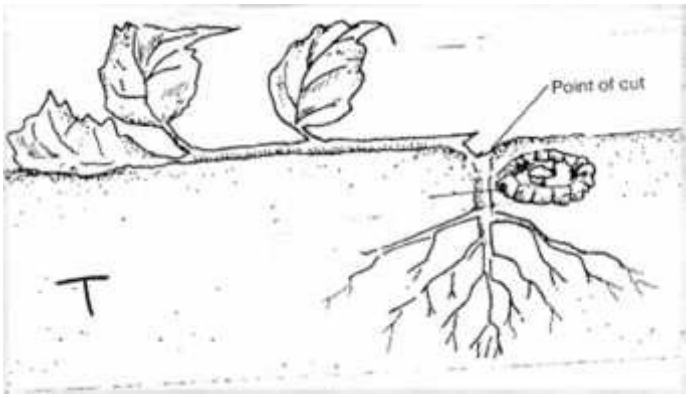
KCSE PREDICTION 13 2022
KENYA CERTIFICATE OF SECONDARY EDUCATION.
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AGRICULTURE
PAPER 1
TIME: 2 HOURS

1. State **four** human factors that influence agriculture (2mks)
2. Name **two** areas of study that make agriculture to be regarded as a science (1mk)
3. State **two** positive effects of high temperature in crop production (1mk
4(a). What is a seedbed? (1mk)
(b) Outline **four** factors that influence number of cultivation operations when preparing a seedbed (2mks)
5. State **four** advantages of using organic manures over inorganic fertilizers (2mks)
6 Name **two** processing varieties of tomatoes (1mk)
7. A farmer is advised to apply 40 kgs $P_2 0_5$ per hectare of a crop under maize. He has access to single Super Phosphate fertilizers containing 20% $P_2 0_5$ ($1^1/_2$ mks
(a) Calculate how much single super phophpate (ssp) fertilizer he should apply in two hectare (2Ha) of his Land. (Show your working) (2mks)
(b) Why is it advisable to apply phosphate fertilizers at planting time (1mk)
8. (a) What is forage defoliation? (1mk)
(b) State three ways by which a farmer can make efficient use of forage crops (3mks)
9. List **four** benefits of agroforestry tree species to a farmer 2mks)
10. Give **two** examples of fixed costs in agricultural production (1mk)
(b) List **two** sources of agricultural credit to a farmer (1mk
11. Name **two** chemicals used in treatment of water (1mk)
12. What is the objective of pricking out in nursery management? (1mk)
13. State **two** practices that may prevent damage of seedlings during transplanting (1mk)
14. Name **four** post harvest practices done in the farm on cereals crops (2mks)
15. Name **two** types of records that a poultry farmer should keep (1mk)
16. State **two** main categories of crop pests (1mk
17. Give **two** maintenance practices carried out on sprinklers (1mk)
18. Name **two** weeds that create unconducive working environment to a farme (1mk)

SECTION B (20 MARKS)

Answer all questions in this section

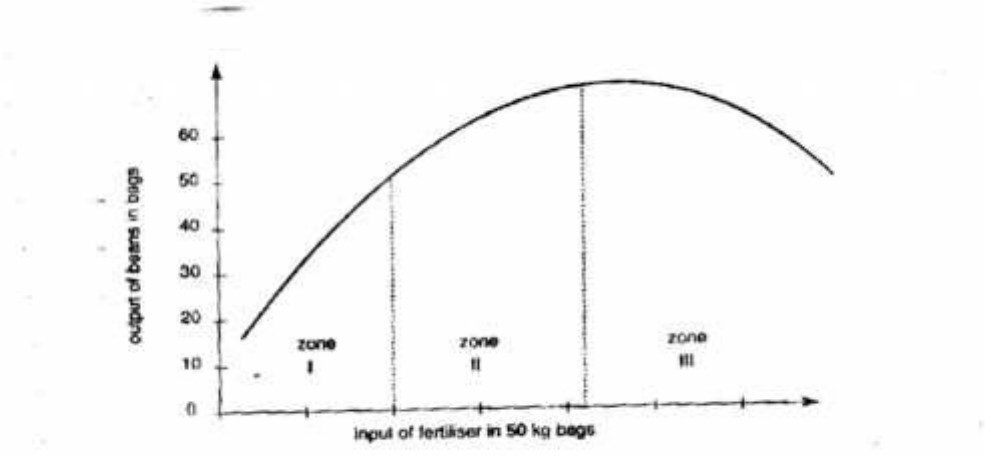
20. The diagram below and labelled T illustrates a field pest. Study the diagram carefully and answer the questions that follows



(a Identify the pest ***(1mk)***
(b) State a non-chemical method used to control the pest you have identified above ***(1mk)***
(c) Name **two** vegetable crops damaged by the pest above ***(2mks)***
(d) At what stage of crops growth is the pest more damaging ***(1mk)***

FOR MARKING SCHEMES INBOX 0724351706

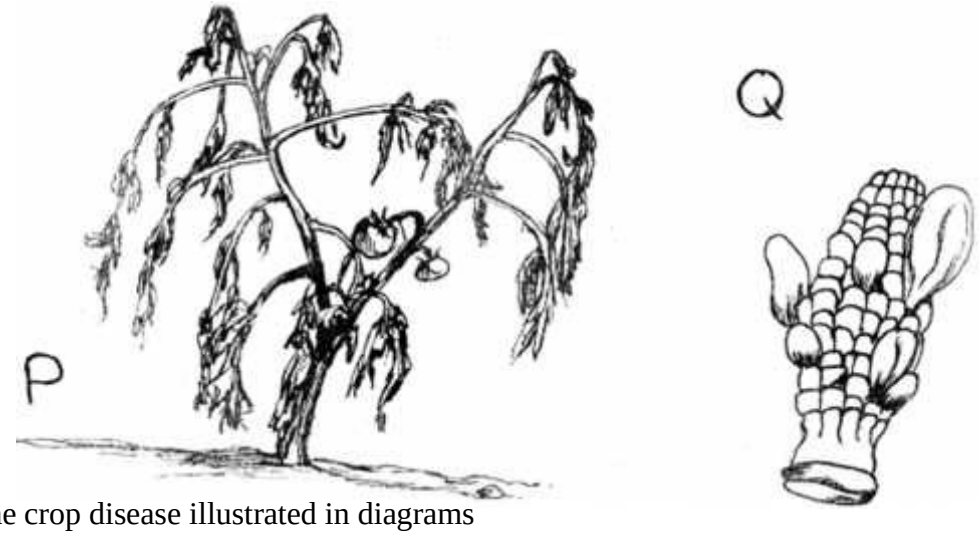
20.The curve below illustrates the law of diminishing returns as used in agricultural economics. Study the curve\and answer the questions that follows:-



(a) What happens in each of the three zones I, II, and III in relation to fertilizers input to beans output (3mks)

(b) Amongst the **three** zones illustrated above, which zone is the rational zone of production . Give a reason (2mks)

21. The diagram below illustrate crop diseases. Study the diagrams carefully and answer the questions that follows :-



(a) Identify the crop disease illustrated in diagrams

P: ..... (1mk)

Q: ..... (1mk)

(b) Give the caustitive agent for each of the above diseases illustrated above (2mks)

P: ..... (1mk)

Q: ..... (1mk

(c) State **one** cultural method used in the control of diseases illustrated by Q (1mk)

22. The table below gives information for Mzee Kogi's farm for the year ending 31-12-2014

Transaction	Kshs.	cts
Dairy cattle	25,000	
Maize in store	10,000	
Buildings	150,000	
Potatoes for sale	3,000	
Fertilizers in store	5,000	
Wool sheep	15,000	
Pigs	7,000	
Land (100Ha)	160,000	
Machinery	10,600	
Feeds in store	600	
Office Equipment	1,400	

The farm also has Ksh. 5000/= as cash in bank , 300/= as cash at hand. It was owed 3,000/= for sale of \\ beef and 5,000/= for milk sales. The farm owed Unga Feeds Ltd 5,000/= for concentrates and KGGCU 2,500/= for farm tools acquired on credit .

(i) Draw a balance sheet for the farm for the year ending 31-12-201 (4mks)

(b) Was the business solvent or insolvent? for your answer (1mk)

SECTION C (40marks)

Answer any two questions from this Section

23 (a) Discuss the various factors that influence soil erosion 10mks)

(b) Describe the benefits of a land title deed to a farmer (5mks)

(c) State the precautions a farmer should undertake when collecting soil samples from a crop field (5mks)

24. (a) State and explain the various marketing functions undertaken in agriculture (10mks)

(b) Discuss the factors that are considered in drawing a farm plan (10mks)

26. (i) Discuss production of sorghum under the following sub-headings (4mks)

(a) Ecological requirements (4mks)

(b) Land preparation and planting (4mks)

(c) Pest and disease control (4mks)

(ii) Discuss the factors that determine the choice of tools and implements used in tillage operations (6mks)

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AGRICULTURE
PAPER 2
TIME: 2 HOURS

1. Give **two** importance of keeping livestock to a farmer (1mk)

2. What is the intermediate host of a tapeworm (*Taenia Solium*) ($^1/_2$mk)
3. Name the disease transmitted by the vector tsetsefly ($^1/_2$mk)
4. State **two** characteristics of roughages (1mks)
5. Give **four** uses of a crush in livestock production (2mks
6. State **two** methods of controlling cannibalism in poultry (1mk)
7. State **two** advantages of using stones as construction materials (1mk)
8. Give **two** uses of wind as a source of power on the farm (1mk)
9. A breed of exotic dairy cattle is grey in colour, has a small head, protruding and pigmented eyes, black muzzle, hooves and switch . It produces lowest amount of milk amongst the four dairy breeds and has the highest butterfat content . Name the breed ($^1/_2$mk)
10. Which equipment is used to measure specific gravity of milk ($^1/_2$mk)
11. Define the following terms :
    (i) Heifer .....(1mk)
    (ii) Steer .....(1mk).
12. Name **two** protozoan diseases of livestock (1mk)
13. Name **two** tools equipment that can be used to castrate a bull (1mk)
14. Give **two** uses of a footbath in a cattle dip (2mks)
15. State the gestation periods of the following animals ($1^1/_2$mk)
    (i) Sow.....
    (ii) Cow.....
    (iii) Doe/Nanny.....
16. List down **four** maintenance practices of mould board plought ((2mks
17. Give a reason as to why birds lay soft shelled eggs ($^1/_2$mk)
18. Why should irish potatoes not be fed to rabbits? (1mk)
19. Give **two** examples of fresh water fish water fish species commonly reared in Kenya (1mk
20. List **two** reasons for feeding bees (2mks)

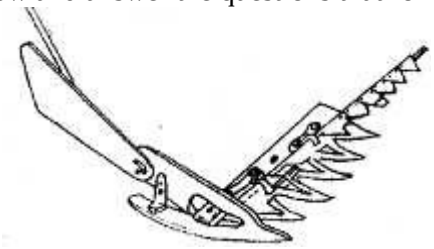
21. Give **two** reasons as to why vitamins are important in livestock nutrition (2mks)
22. Give **four** causes of infertililty in cattle (2mks)
23. State **two** methods of extracting honey (1mk)
24. Give **two** reasons for washing a cows udder which warm water during milking 1mk)
25. State **two** predisposing factors of foot rot disease in sheep (1mk)

FOR MARKING SCHEMES INBOX 0724351706

SECTION B (20 MKS)

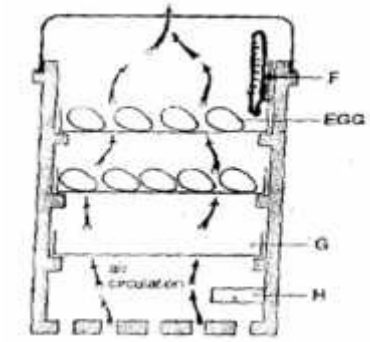
Answer all questions in this section

26. Study the diagram below and answer the questions that follow



(a) Identify the implement illustrated in the diagram above (1mk)
(b) Give **one** function of the implement you have named in (a) above (1mk)
(c) Name a source of power that can be used to operate the implement (1mk)
(d) List **two** maintenance practices that can be carried out on the implement (2mks)

27. The diagram below illustrates a routine practice carried out in poultry farming. Study the diagram and answer the questions that follow.



(a) Identify the structure illustrated in the diagram above (1mk)
(b) Name the parts labelled F, G and H . (3mks)
(c) State **two** other conditions other than air ciruclation in the structure that help to facilitate the practice carried out in the illustration you identified in (a) (2mks)

28 (a). A farmer is to prepare a ration for his pigs containing 20% CP using maize 8% CP and Soybean meal 36% CP Using pearson's square method, calculate how much of each foodstuff the farmer would require to make 100kgs of the feed (show your working) (5mk
(b) List **three** digestive enzymes found in the the duodenum (3mks)
(c) What is the importance of calcium grit in the digestive system of an avian or poultry (1mk

SECTION C (40 Mks)

Answer any two questions in this section

29 (a) Discuss the uses of water in a animal's body (10mks)
(b) Describe the limitations of using animal power on the farm (10mks)

30. (a) Describe the essentials of clean milk production (10mks)
(b) Outiline **five** reasons why bees swarm (5mks)
(c) Describe **five** predisposing factors of livestock diseases (5mks)

31. (a) Explain the importance of dehorning in cattle management (5mks)
(b) State **five** factors that are considered while siting a zero grazing unit (5mks)
(c) Discuss the factors a farmer should consider while culling layers in poultry farming (10mks)

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AGRICULTURE
PAPER 1

SECTION A: (30 Marks)

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

1. State three conditions under which shifting cultivation is practiced in agiven area. ($1^1/_2$ marks)
2. State four activities that are carried out during soil sampling in the field. (2 marks)
3. Give four conditions that necessitate clearing of land. (2 marks)
4. Give three ways in which nitrogen is removed from atmosphere. ($1^1/_2$ marks)
5. Mention four advantages of using polythene sleeves in the establishment of seedlings. (2 marks)
6. What are four effects of education and technology on agriculture? (2 marks)
7. List two maintenance practices of sub-surface irrigation. (1 mark)
8. Give four reasons for keeping health records. (2 marks)
9. State four factors that affect the selectivity and effectiveness of herbicides. (2 marks)
10. State four roles of additives in silage making. (2 marks)
11. State two precautions to be taken when harvesting cotton. (2 marks)
12. State four reasons why sub-soiling is important as an operation of land preparation. (2 marks)
13. Name any two diseases that affect bean production in the field. (1 mark)
14. a) Differentiate between over sowing and under sowing. (1 mark)
    b) Given the maize is planted at a spacing of 75 x25cm. Calculate the plant population in a plot of land measuring 4m x 4m. Show your working. (2 marks)
15. State four sources of agricultural credit to farmers. (2 marks)
16. List four management practices which are used to maintain pasture productivity. (2 marks)

SECTION B: (20 MARKS)

17. The illustration below shows one of the grazing systems commonly used by farmers.
    a) Identify the grazing system (1 mark)
    b) With the help of arrows indicate the movement of livestock from one paddock to the next. (1 mark)
    c) What is the purpose of the part labeled Y on the illustration. (1 mark)
    d) State two advantages of this system of grazing. (1 mark)
18. The diagram below represents parts of a water harvesting structure. Study it carefully and answer the following questions.
    a) Name the parts labeled A and O on the diagram. (2 marks)
    b) Identify the method of water harvesting illustrated. (1 mark)
    c) State the use of the part labeled B. (1 mark)
    d) State two maintenance practices needed for part labeled E. (2 marks)
19. Below is an illustration of a maize cob attacked by smut disease. Study it carefully and answer the questions that follow.
    a) Beside what is visible on the maize cob. State two other symptoms of the disease. (2 marks)
    b) State two control measures of the above disease. (2 marks)
20. The illustration below shows materials used in vegetative propagation labeled A and B.
    i) Identify materials A and B (1 mark)
    ii) Name the parts labeled X and Y (1 mark)
    iii) Name the preparation method used to get the vegetative material labeled B. (1 mark)
    iv) State three disadvantages of vegetative propagation. (3 marks)

SECTION C: (40 MARKS)

Answer any two questions from this section in the spaces provided at the end of the section.

21. a) Explain how various practices carried out in the field help to control crop diseases. (12 marks)
    b) What are the advantages of grass legume pasture over a pure grass pasture? (8 marks)
22. a) Describe the establishment of kales under the following sub-headings:
    i) Establishment in the nursery (3 marks)
    ii) Transplanting of seedlings. (8 marks)
    c) Explain the various ways in which each of the following environmental factors influence crop production.
    i) Temperature (4 marks)
    ii) Wind (5 marks)
23.

24. a) Define profit and loss account
    b) The following is a list of financial and position of Mr. Ndama's farm in 2010. Study the information carefully and then answer the questions that follow:

Items	**value**
Sale of diary cattle	28,000.00
Closing valuation	25,000.00
Purchase of fertilizer	6,000.00
Interest payable	2,000.00
Milk sale	3,000.00
Veterinary bills	900.00
Wages	1,600.00
Opening evaluation	4,800.00
Sales of pigs	8,000.00
Purchase of assorted tools	3,560.00
Depreciation of machines	720.00
Repair of pigsty	370.00

i) Prepare a profit and loss account for Mr. Ndama's farm.
ii) Calculate the percentage profit and loss of Mr. Ndama's firm.

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AGRICULTURE
PAPER 2

SECTION A: (30 Marks)

Answer all the questions in this section in the spaces provided

1. Give four reasons why colostrum should be fed to calf. (2 marks)
2. State three disadvantages of natural methods of calf rearing. ($1^1/_2$ marks)
3. Name five milking materials and equipment required during milking of a cow. ($2^1/_2$ marks)
4. Sate the functions of a carburetor in fuel system. (1 mark)
5. State the functions of the following parts of a disc plough. ($2^1/_2$ marks)
   i) The beam
   ii) Disc
   iii) Scrapers
   iv) Standards
   v) Furrow wheel
6. Give two notifiable diseases in cattle. (1 mark)
7. State four factors that determine the quality of honey. (2 marks)
8. State four practices carried out on fish before preservation. (2 marks)
9. Give four properties of a good vaccine. (2 marks)
10. Define predisposing factors as used in livestock. (1 mark)
11. State four predisposing factors that can lead to cow contracting mastitis. (2 marks)
12. State four reasons for handling livestock in the farm. (2 marks)
13. Differentiate between the following livestock breed terms. (2 marks)
    i) Bull and bullock
    ii) Ram and ewe
14. Name two meat breeds of sheep reared in Kenya today. (1 mark)
15. Identify the colour of the following breeds of poultry. (1 mark)
    i) Light Sussex
    ii) New Hampshire
16. Name two dual purpose breeds of cattle. (1 mark)
17. State three precautions observed when using workshop tool and equipment. ($1^1/_2$ marks)
18. State four signs of parturition shown by a sow. (2 marks)

SECTION B: (20 MARKS)

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

19. a) Using Pearson square, calculate how much of wheat (35% DCP) would be mixed with sunflower seed cake (10% DCP) to come up with Duck mash (20% DCP) on a ration weighing 100kg. (2 marks)
    b) Below is a diagram of a cow suffering from a nutritional deficiency diseases. Study it and answer the question below.
       i) Identify the disease the animal is suffering from. ($^1/_2$ mark)
       ii) List two symptoms shown by a cow suffering from the disease mentioned in b (i) above. (1 mark)
       iii) Name the mineral deficient that cause the above disease. ($^1/_2$ mark)
       iv) Sate the two control measures of the disease mentioned above. (1 mark)
20. Study the tools below and answer the questions below.
    a) Identify the tools X,Z and W ($1^1/_2$ marks)
    b) What are the functions of tools W and X (2 marks)
21. The diagram below shows a practice carried out in poultry.
    i) Name the practice above. ($^1/_2$ mark)
    ii) Identify the diagram that shows the correct method of carrying out the practice mentioned in (i) above. ($^1/_2$ mark)
    iii) Name two tools used to carry out the practice above. (1 mark)
    iv) Give two reasons for carrying out the practice shown above. (1 mark)
22. The diagram below shows power transmission system of a tractor. Study it and answer the questions that follow.
    a) Name parts labeled A , B, C and D (4 marks)
    b) State three maintenance practice of sprayers. ($1^1/_2$mks)
23. The illustration below represents an equipment used in poultry production. Study it and answer the questions that follow.

i) Identify the equipment (1 mark)
ii) Identify the parts labeled C , D (1 mark)
iii) Why is it important to turn the eggs 1800 every 6-8 hours within the equipment. (1 mark)

SECTION C: (40 MARKS)

Answer any two questions in this section.

24. a) Highlight four advantages of deep litter system. (4 marks)
b) State four ways in which stress can be controlled in poultry management. (4 marks)
c) Outline five disadvantages of animal-drawn implements over tractor-drawn implements. (5 marks)
d) i) Sate three characteristics of a poor layer. (3 marks)
ii)Outline four advantages of artificial insemination in cattle management. (4 marks)
25. a) i) Distinguish between close breeding and line breeding.
ii) Give three reasons for out breeding as used in livestock production. (3 marks)
b) Describe the function of various parts of a plunge dip. (10 marks)
c) Sate five disadvantages of live fences. (5 marks)
26. a) Describe coccidiosis under the following sub heading.
i) Causal organism (1 mark)
ii) Signs of infection (5 mark)
iii) Control measures (4 mark)
b) Describe lifecycle of three host tick. (7 marks)
Describe how a calf is trained to drink milk from the bucket. (3 marks)

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AGRICULTURE
PAPER 1

TIME: 2 HOURS

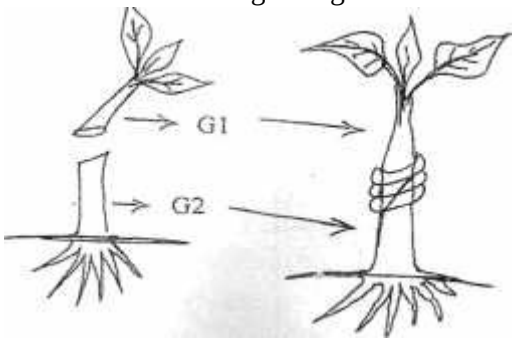
SECTION A (30 marks)
Answer ALL the questions in this section in the spaces provided

1. What four disadvantages are associated with burning of land in shifting cultivation? [2mks]
2. Which four soil properties are influenced by soil texture? [2mks]
3. Outline **four** characteristics researchers aim at developing in breeding of maize crop. [2mks]
4. State **three** ways on how a farmer prevents loss of soil fertility. [1 ½ mks
5. What is changing cycle as used in coffee production? [1 mk]
6. Give **two** methods used for seed-treatment of tree species before planting in agroforestry. [2mks]
7. Outline **two** properties of Potassic fertilizers [1 mk]
8. State **two** roles of water in a field of paddy rice [1 mk]
9. Outline four factors that would influence the depth of tillage in a seed bed for growing ewe
10. A farmer has the option of growing either wheat or maize in his one hectare of land. Wheat gives a return of Ksh. 20,000 while maize fetches Ksh. 35,000 in the market.
    What will be the opportunity cost? [1mk]
11. Mention **four** factors that determine the carrying capacity of a pasture [2 mks]
12. State **four** distinctive features of monopolistic competition
13. Calculate the amount of K2O that is contained in 400kg of a compound fertilizer 25:10:; (Show your working) [1mk]
14. State **four** factors that determine the stage at which a crop is harvested [2mks]
15. State three advantages of non-capped multiple stem system. [1 ½ mks]
16. Outline four problems associated with farm yard manure [2 mks]
17. Name two main ways in which pastures are classified. (1 mark)
18. Outline two examples of joint products in crop production (1mark)
19. State two roles of water in a field of paddy rice (1 mark)

SECTION B (30 marks)
Answer ALL the questions in this section in the spaces provided

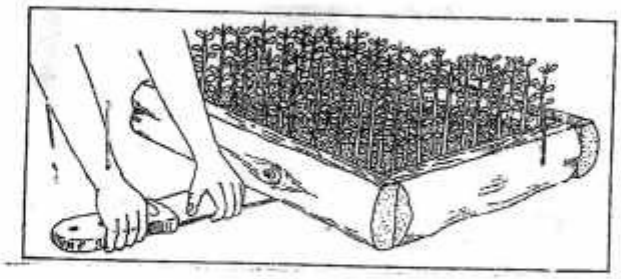
20. (a) Design rotation programme of two seasons using the following crops; Maize, garden peas, kales and Irish potatoes. (2 marks)

(b) The illustration below shows a method of grafting. Use it to answer the following questions.



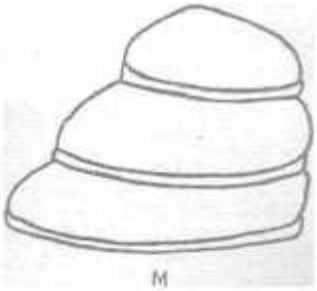
(i) Identify the type of grafting. (1/2 mark)
(ii) Name the parts named G1 and G2. (1 mk)
(iii) List down three equipment / tools used to carry out the above type of grafting. (1 ½ mks)

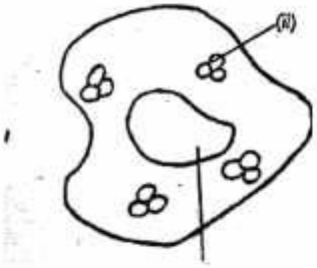
21. (a) The diagram below illustrates a management practice carried out on tree seedlings



i) Identify the management practice carried out illustred above. (1 mk)
ii) State two other management practices carried on tree seedlings (2mks)

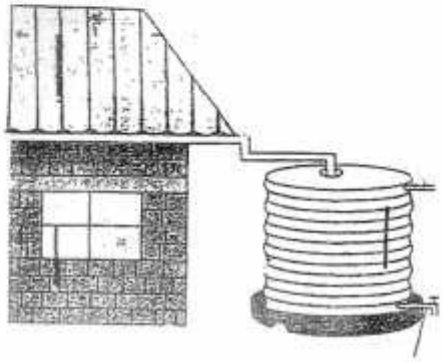
b) The diagram below illustrates some types of soil structure. Study and answer the questions that follow.





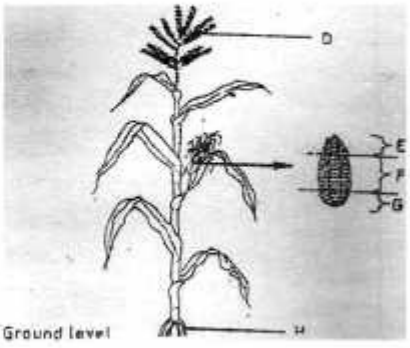
i) Identify the types of soil structure illustrated in the diagrams M and N [1 mk]
ii) Name the parts labeled (i) and (ii) in the diagram [1 mk]

22. The diagram below shows a structure used in collecting water in the farm



i) Identify the method of collection above (1 mk)
ii) Give two factors that will determine the amount of water collected in the above mentioned structure (1 mk)
iii) Outline two maintenance practice that should be carried out on part labeled C above [1 mk[
iv) Name two other method used in collecting water in the farm. [1 mk]

23. The diagram below illustrates a cereal crop plant and its produce, study the diagram carefully and answer the question that follows.



a) Name one disease that attack the part labeled D in the diagram [1mk]
b) From which section of the produce labeled E. F and G should seed for planting be obtained (1/2 mk)
c) Give one reason for the answer given in (b) above. [1 mk]
d) State two functions of the part labeled H in the diagram [1mk]
e) A farmer has a piece of land measuring 90m by 60m to plant seeds selected in (b) above at the rate of one seed per hole and spacing of 90cm by 30cm, calculate the plant population in the whole field if ail the seeds germinated (Show your working) (1 ½ mks)

SECTION C (40 MARKS)

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

24. (a) Outline five steps followed in land adjudication. (5 marks)
(b) Explain five physical structures used to control soil erosion. (10 marks)
(c) Give five principals that govern the functioning of co-operatives. (5 marks)

25. Describe beans (phaseolus vulgaris) under the following sub-headings.
(a) Ecological requirements. (4 marks)
(b) Varieties (4 marks)
(c) Seedbed preparation (8 marks)
(d) Pests and diseases control. (4 marks)

26. (a) The Kipkunur enterprise obtained a loan of Kshs.30, 000 to repair Lorries and tractors. It had a bank overdraft of Kshs. 4,000. The enterprise is yet to pay Kshs. 4,000 as wages for casual workers and Kshs. 600 as interest on a loan.
The following were also found in the premises of the enterprise. Remains of seeds and fertilizers worth Kshs. 400; building and land valued at Kshs. 30,000 and Kshs. 6,000 respectively; Coffee trees worth Kshs. 4,000, tractor Kshs. 20,000, 2 heifers worth Kshs. 14,000 and one calf Kshs. 600.
Debtors of Kipkunur enterprise are coffee board Kshs. 3,649.50.The bank account has 9,950 and Kshs. 5,000.50 in the cash box in the enterprise office.
Using the above information prepare a balance sheet for Kipkunur enterprise for the year ending 30th June 2011. (6 mks)
(b) (i) What is a balance sheet? (2 mks)
(ii) Was Kipkunur enterprise solvent or insolvent? Give a reason to your answer. (2 mks)
(c) Explain **five** ways in which labour productivity can be improved in farm. (l0 marks)

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PAPER 2

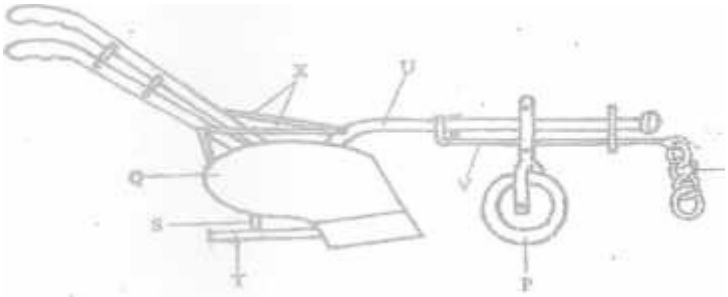
TIME: 2 HOURS

SECTION A: (30 MARKS)
Answer all the questions in this section in the spaces provided

1. Name any two tractors drawn implements with three-point hitched. [1 mk]
2. Name two methods of identifying piglets in the farm. [1 mk]
3. (a) State four symptoms of shown by poultry when suffering from Newcastle disease [2 mks]
   (b) Give the name of the organism that causes East Coast Fever. [2 mks]
4. State four desirable characteristics of egg meant for market. [2mks]
5. Give **four** effects of ticks on livestock bodies. [2mks]
6. Give **two** features that enable the gizzard to carry out its functions effectively. [1mk]
7. State **three** functions of a differential in a tractor. [2mks]
8. State **one** use of the following tools: - [1 ½ mks]
   (a) Spoke shave
   (b) Stock and die
   (c) Wire strainer
9. List four causes of sterility in dairy cows. [2mks]
10. State **four** factors which influence selection of construction materials. [1 ½ mks]
11. State **four** practices that should be carried out on a fish pond after draining it. [2mks]
12. State **three** reasons for spreading polythene paper in the slab of the farm building. [2mks]
13. State **four** uses of solar energy in the farm. [1 ½ mks]
14. Name **four** tools that can be used to construct the Kenya Top Bar Hive. [2mks]
15. State **four** physiological body processes used as indicators of ill health. [2mks]
16. List **four** functions of lubrication systems. [2mks]
17. State four ways of stimulating milk let down in a dairy cow [2mks]

SECTION B: (20 MARKS)
Answer all the questions in this section in the spaces provided.

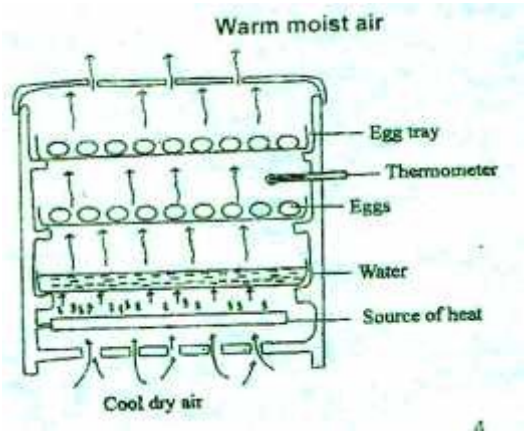
18. Use the diagram below to answer the questions that follow.



a) Identify the implement. [1 mk]
b) Identify the parts labeled S, V, W, and X. [2 mks]
c) What is the use of the following parts? [2 mks]

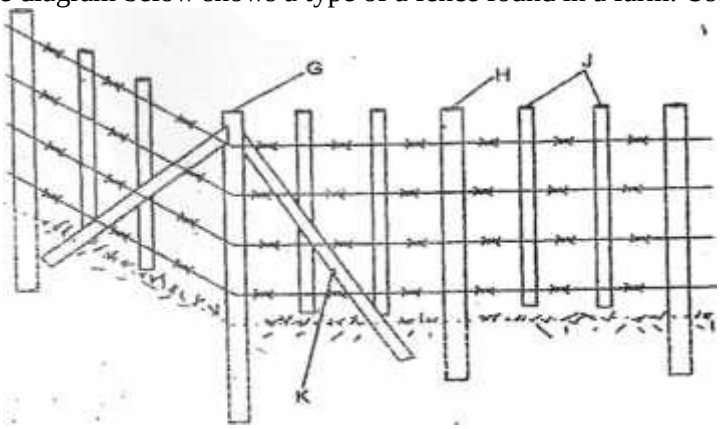
FOR MARKING SCHEMES INBOX 0724351706

19. Below is a structure used in poultry reproduction?



a) Identify the structure. [1mk]
b) State the main function of the structure. [1mk]
c) Give the function of the following in the structure:- [3 mks]
i) Water
ii) Source of heat
iii) Thermometer

20. The diagram below shows a type of a fence found in a farm. Use it to answer the questions that follow;



a) Identify the above type offence.
b) Name the parts labeled G, H, J and K.
c) State one use part labeled J in a fence.
d) State the appropriate hole depth for posts labeled G and H.

21. The illustration below represents the stages of development of a three host tick. Study it carefully and then answer the questions that follow.



a) Briefly explain what is happening in the following stages:- (2mks)
b) Name the most common sites the tick can be found on the body of an animal. (2mks)
c) Give two examples of a three-host tick. (1mk)

SECTION C: 40 MARKS

Answer any two questions in this section in the spaces provided.

22. a)State **four** possible causes of overheating in an engine.
    b)Describe the maintenance practices to be carried out in a cooling system of a tractor.

23. a)State **three** advantages of using a donkey for farm work.
    b) Describe the procedure of establishing a permanent foundation using concrete.
    c) Describe the characteristics of a good calf pen.

24. a) What are disease predisposing factors?
    b) State **five** diseases predisposing factors in livestock
    c) State **five** predisposing factors of mastitis in dairy cattle.
    d) Explain any **four** general methods of disease control in livestock.

FOR MARKING SCHEMES INBOX 0724351706