c

NAME ……..…….. DATE ……

INDEX NO. …….……..…..… CANDIDATE'S SIGNATURE ……..…..……..

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

KATHIANI SUB - COUNTY

FORM FOUR ENTRANCE EXAMINATION

Kenya Certificate of Secondary Education

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided above.
2. This paper consists of **THREE** sections: A , B and C
3. Answer **ALL** the questions in sections A and B and any **TWO** questions in section C
4. ALL answers **MUST** be written in the spaces provided.
5. Do not remove any pages from this booklet.

FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	**01-18**	**30 marks**	
B	**19-23**	**20 marks**	
C	**24-26**	**40 marks**	
		Total score	

This paper consists of 8 printed pages.
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Section A. (30 Marks)

Answer ALL questions in this section in the spaces provided.

1. State four methods of acquiring land in Kenya. (2 Marks)

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2. Write down four edaphic factors which influence Agriculture. (2 Marks)

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3. a) Explain the term marcotting as it is used in vegetative propagation. (1 Mark)

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b) Give any four benefits of grafting to an avocado farmer. (2 Marks)

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4. a) Give four characteristics of a fertile soil. (2 Marks)

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b) State two reasons for carrying out a soil test. (1 Mark)

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5. a) List four economic importance of crop pests. (2 Marks)

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b) Explain the term integrated Management – I.P.M (1 Mark)

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6. List two aspects of light that influence crop growth. (1 Mark)

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7. State four benefits for minimum tillage. (2 Marks)

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8. a) List four types of terraces. (2 Marks)

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b) Give four methods that could be used to drain farmland. (2 Marks)

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9. State two importance of tissue culture in crop propagation. (1 Mark)

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10. State the conditions under which opportunity cost is zero in a farming enterprise. (1 Mark)

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11. State four source of Nitrogen in the soil for plants. (2 Marks)

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12. Give two benefits of possessing a land title-deed to a farmer. (1 Mark)

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13. a) State four factors that determine the quality of silage. (2Marks)

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b) Outline three reasons of conserving forage. (1½Marks)

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14. Explain the following terms. (1½Marks)

i) Seed dressing

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ii) Seed inoculation

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iii) Chitting.

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Section B (20 Marks)

Answer ALL the questions in the spaces.

15. a) Define the term soil sampling. (1 Mark)

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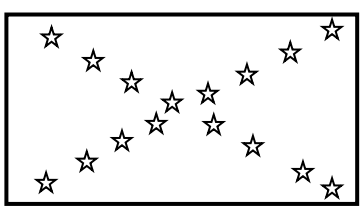
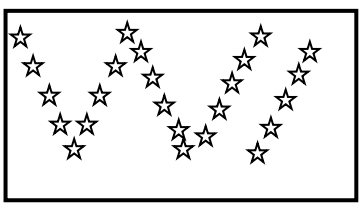
b) The diagram below represents two methods of soil sampling.

N M





i) Identify the methods N and M (1 Marks)

N - ……

M - ……

ii) State the precautions observed when carrying out the practices in diagrams N and M. (1½Marks)

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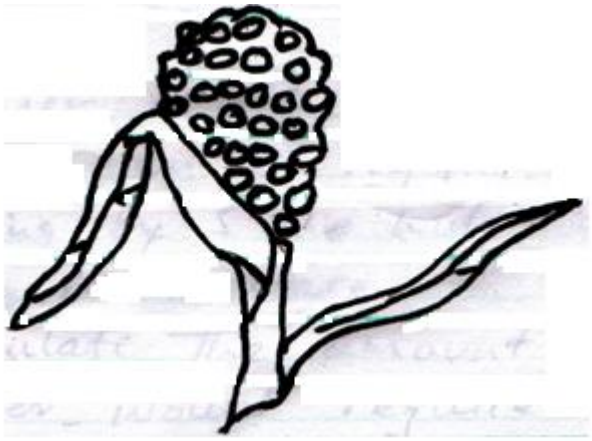
16. Study the diagram below and answer the questions that follow



a) Identify the crop represented by the diagram. (1 Mark)

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b) Apart from damage by birds, name two other serious pests which can attack the above named crop while still in the field. (2 Marks)

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……..……..……

c) Give two effective methods used in controlling birds in a field planted with the above named crop. (2 Marks)

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d) The crop identified above can be grown by dairy farmers as forage. Give two reasons why the crop should be harvested for making silage just before the flowering stage. (2 Marks)

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17. A farmer is to apply a compound fertilizer 20:30:10 on a vegetable plot measuring 5 M long 5 wide, at the rate of 200kg per hectare.
Calculate the amount of fertilizer the farmer would require for the plot. (Show your working) (3Marks)

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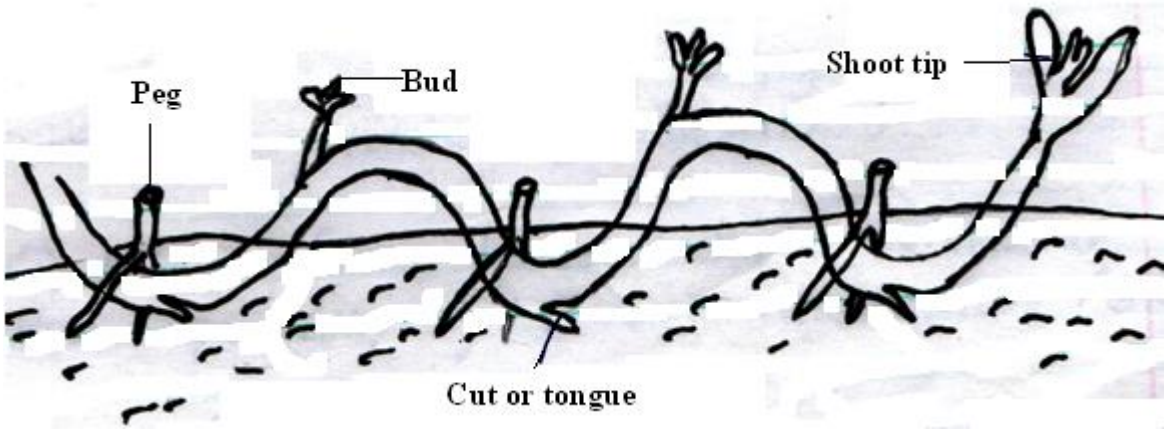
18. The diagram below illustrates a method of crop propagation.



a) Identify the method of propagation represented by the drawing above (½ Mark)

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b) State the importance of the method of propagation illustrated above. (1 Mark)

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c) Explain why a cut or tongue should be made on the bark of the part buried bellow the ground level (1 Mark)

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……..……

(d) Outline four factors which influence rooting of cuttings. (4 Marks)

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Section C (40 Marks)

Answer any TWO questions.

19. a) Describe the benefits of using organic matter for mulching. (10 Marks)
    b) Outline five factors that determine the quality of farmyard manure. (6 Marks)

c) Give four disadvantages of using farmyard manure. (4 Marks)

20\. a) Explain six factors that influence crop rotation. (6 Marks)

b) Describe the post-harvesting practices that should be carried out on cereals crops before storage. (6 Marks)

c) Describe the preparations carried out on a store before storing farm produce. (4 Marks)

d) Explain how a farmer should manage a banana stool for high yields. (4 Marks)

21\. a) List various methods of harvesting water in a farm. (5 Marks)

b) Outline farming activities which may encourage soil erosion. (5 Marks)

c) Explain how various farming practices would help to conserve soil in a farm. (10 Marks)

NAME ……………………………………….. **DATE** …………………………………………………

ADMN NO. ……………………………………… **CANDIDATE'S SIGNATURE** ……………………..

AGRICULTURE
PAPER 2 (THEORY)
OCTOBER / NOVEMBER 2013
TIME: 2 HOURS

KATHIANI SUB - COUNTY
FORM FOUR ENTRANCE EXAMINATION

Kenya Certificate of Secondary Education

443/2
AGRICULTURE
PAPER 2 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

6. Write your name and index number in the spaces provided above.
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FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
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B	**17-21**	**20 marks**	
C	**22** **23** **24**	**40 marks**	
		Total score	

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SECTION A – 30 MARKS
Answer all questions in the spaces provided

1. Give two qualities of creep feed. (1mark)

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……

2. Differentiate between:

(a) Curative and prophylactic drugs (2 marks)

……

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(b) Isolation and quarantine (2 marks)

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3. (a) Name <u>two</u> livestock diseases that are both bacterial and zoonotic. (1mark)

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(b) Name <u>two</u> viral diseases in livestock. (1mark)

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4. List <u>four</u> reasons for identification in livestock. (2marks)

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5. Identify <u>two</u> preparations done on ewe before mating. (1mark)

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6. List <u>five</u> methods of dehorning. (2½ marks)

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7. State <u>three</u> methods of fish harvesting (1½ marks)

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8. Name <u>two</u> nutritional diseases in livestock. (1mark)

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9. Differentiate between mothering ability and prolificacy. (2 marks)

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10. (a) Which livestock disease is transmitted by the following ticks.

(i) Blue tick (1mark)

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(ii) Brown ear tick (1mark)

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(b) Which of the two ticks named above is a one-host tick (1mark)

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11. State any four disadvantages of nomadic pastoralism. (2marks)

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12. Distinguish between Epistasis and heterosis. (2 marks)

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13. State three control measures of water snails in a farm. (1½ marks)

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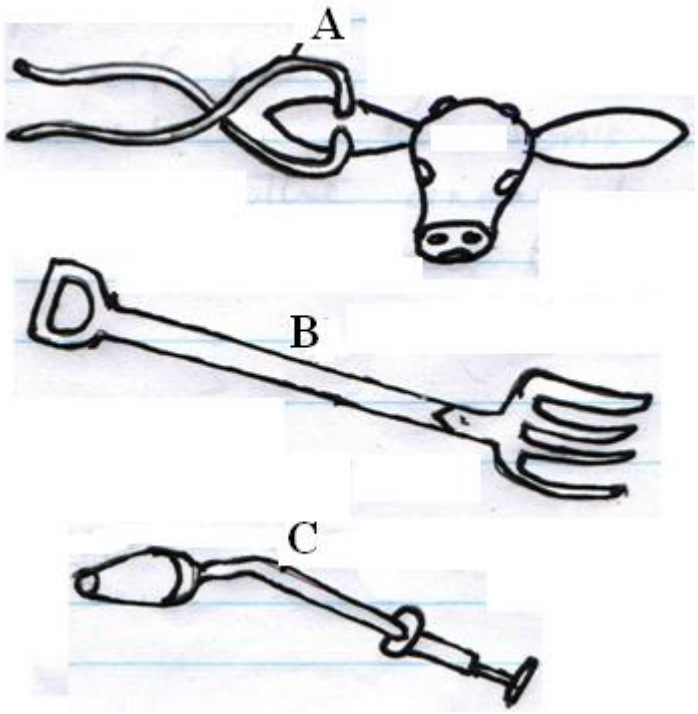
14. Identify the following farm tools. (1½ marks)



15. Name two methods used by farmers to prevent piglet anaemia. (1mark)

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16. State two disadvantages of in-breeding in dairy cattle production. (2 marks)

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SECTION B – 20

Answer all the questions in the spaces

17. Explain the term production ration as used in livestock production. (1 mark)

…….....

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18. A farmer wanted to prepare a 200kg of calf rearing ration containing 20% DCP. Using Pearson's Square Method compute the amount of sunflower (10% DCP) and maize meal (35% DCP) the farmer would require to prepare the ration. (Show your working) (4 marks)

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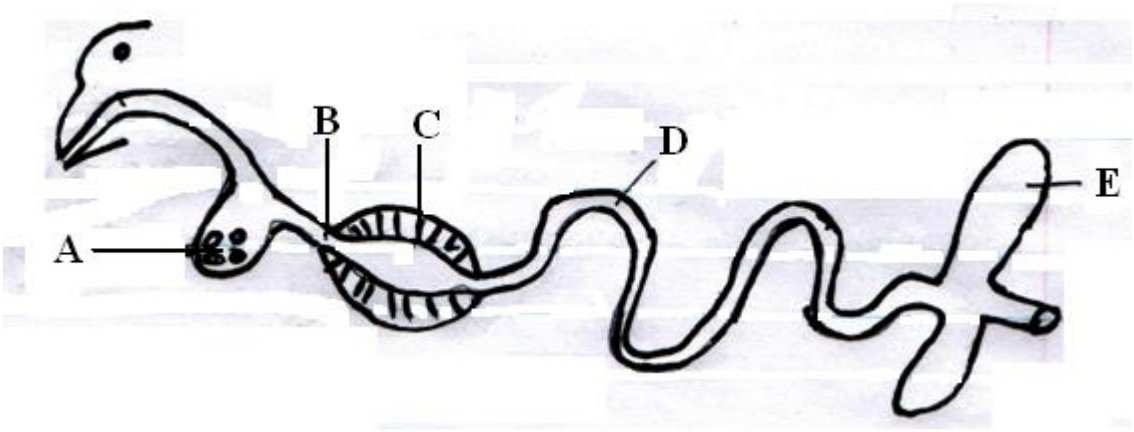
19. Below is a digestive system of poultry. Study it and answer the questions below.



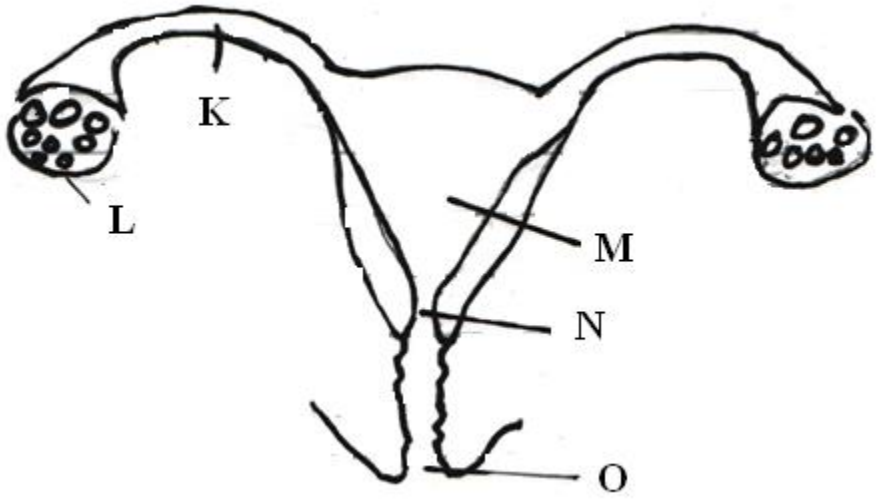
Fill in the table below.

PART	IDENTIFY	FUNCTION
A		
B		
C		
D		
E		

(½ x 10 = 5 mks)

NB: If identification is wrong, reject the function

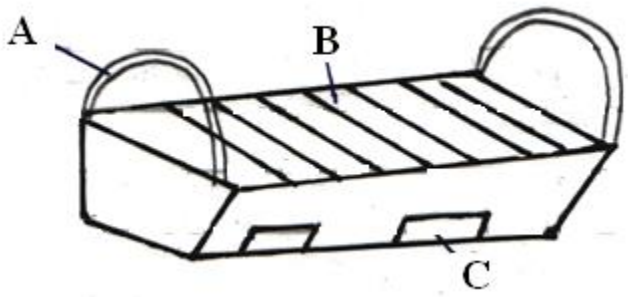
20. The diagram below shows the reproductive system of a cow. Study it and answer the questions that follow.



PART	IDENTIFY	FUNCTION
K		
L		
M		
N		
O		

(½ x 10 = 5 marks)

21. Below is a diagram illustrating a bee-hive. Study it carefully and answer the questions that follow.



(a) Identify the type of bee-hive. (1½ marks)

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(b) Name the parts labeled A, B and C. (1½ marks)

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(c) State three advantages of the above bee-hive compared to the traditional log-hive. (3 marks)

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SECTION C – 40 MKS

Answer any two questions

22. (a) Describe the procedure followed when using hypodermic syringe and needle to administer drugs to cattle. (3 marks)

(b) Outline six reasons for maintaining livestock in good health. (6 marks)

(c) Discuss coccidiosis under the following headings.

(i) Causal organism (1mark)

(ii) Livestock species attacked (2 marks)

(iii) Symptoms of attack (4marks)

(iv) Control measures (4 marks)

23. (a) Discuss the importance of farm fence. (10 marks)

(b) State the factors considered when siting farm structures. (10 marks)

24. (a) Give the factors that contribute to the distribution of livestock in Kenya. (4 marks)

(b) What is the importance of keeping animals on the farm. (6 marks)

(c) Outline the rearing practices carried out to one-day lamb until serving time. (10 marks)

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KATHIANI SUB – COUNTY FORM FOUR ENTRANCE EXAMINATION

443/1

AGRICULTURE PAPER 1

MARKING SCHEME

Section A

1. ♦ Purchasing/ Buying.
   ♦ Inheritance.
   ♦ As compensation.
   ♦ Payments of debts. (4x ½ =2 Marks)
2. • Soil structure.
   • Soil texture.
   • Soil water.
   • Soil Ph.
   • Soil aeration.
   • Soil drainage. ***(mark first 4)*** (4x ½ =2 Marks)
3. a) The process of influencing branches to form roots while still attached to the main plant/mother plant. (1x 1 =1 Marks)

   b) ⇒ Early maturity
   ⇒ Good harvesting
   ⇒ Repair of damaged branches.
   ⇒ Improved quality fruits. (4x ½ =2 Marks)
4. a) Characteristics of a fertile soil.
   ✓ High nutrient content.
   ✓ Good aeration
   ✓ Good drainage.
   ✓ High organic matter.
   ✓ Suitable PH
   ✓ Less pests/diseases. ***(mark first 4)*** (4x ½ =2 Marks)

   b) → Determine Soil fertility
   → Determine soil PH.
   → Determine suitable crops. (2x ½ =1 Mark)
5. a) • Lowers crop quality.
   • Increases cost of production during their control.
   • Lower the quality of produce.
   • Some field unearth planted seeds resulting to low plant population.
   • Some pests e.g. Nematodes damage crop roots causing wilting and death to the plant.
   • Control of pests using chemicals pollutes the environment. (4x ½ =2 Marks)

   b) Combination of various methods of pest control such as physical, chemical, biological and cultural methods. (1x 1 =1 Mark)
6. – Light intensity
   - Wave Length.
   - Light duration. 2 x ½ = 1mark
7. ⇒ Maintains soil moisture
   ⇒ Conserves soil moisture.
   ⇒ Avoids root damage.
   ⇒ Reduces the cost of seedbed preparation.
   ⇒ Reduces soil erosion e.g. where mulching is applied. (4x ½ =2 Marks)
8. a) • Broad based terraces.
   • Narrow based terraces.
   • Bench terraces.

- Fanya juu terraces. (4x ½ =2 Marks)

b) Open ditches/ canals/ furrows.

Underground pipes.

French drains.

Cambered beds.

Pumping out water.

Planting trees with high rate of transpiration e.g. Eucalyptus. ***(mark first 4)*** (4x ½ =2 Marks)

9. – Mass production of propagules/plantlets.
   – It can be used to rescue a damaged crop.
   – Helps to propagate seedless crops or crops whose seeds are not viable.
   – Helps to propagate disease free seedlings/plantlets. ***(mark first 4)*** (2x ½ =1 Mark)

10. - If it's a gift.
    - Where there is no alternative. (1x1=1Mark)

11. - Artificial fertilizers.
    - Organic manures/FYM/Composite manure/Green manure.

    - Fixation by lightning.

    - Fixation of nitrogen by Nitrogen fixing bacteria. (4x ½ =2 Marks)

12. - Can be used to secure credit facilities/ collateral security.
    - Minimises land disputes.

    - Gives incentives to the owner to invest on the farm.

    - Gives security of tenure. (2x ½ =1 Mark)

13. a) - Types of plants used.
       - Method of preparation.

       - Age of silage.
       - Contamination/presence of foreign materials in the feed. (4x ½ =2 Marks)

    b) - To avoid wastage.

       - To preserve and ensure supply of feed throughout the year.

       - To sell the excess to earn the income. (3x ½ =1 ½ Marks)

14. i) Coating seeds with a chemical/pesticide to prevent damage by soil-borne pests.
    ii) Coating legume seeds with an inoculants. (Preparation of a Rhizobium bacterium strain)

    iii) Encouraging potato seeds to sprout/inducing potato seeds to sprout before planting.
    (3x ½ =1 ½ Marks)

Section B (20 Marks)

15. a) Is the collecting of a small amount of soil (sample) from different parts of the field for the purpose of analysis. 1 mark

b) i) N – Traverse method.

M – Zigzag method. (2x ½ =1 Mark)

ii) - Avoid sampling from unusual areas e.g. along fence lines, under trees, near ant-hills

- Avoid contamination of the sample by using polythene papers.

- Avoid mixing the top soil with sub-soil.

- Avoid recently fertilized soil. (3x ½ =1 ½ Marks)

16. a) Sorghum (1x 1 =1 Mark)

b) - Stalkborer
- Shoot fly.
- Midges. 1x2 =2marks

c) - Trapping
- Scaring
- Poisoning the birds.
- Covering the heads with polythene papers. (2x 1 =2 Marks)

d) - High nutrient content.
- High leaf-stem ratio. (2x 1 =2 Marks)

17. Area of plot.

5M x5M =25M^2 √

1 ha = 10,000M^2

10,000 M^2 – 200 kg

Therefore, 25 $\frac{M2 = 25 \times 200}{10,000}$ √

=0.5 Kg √ (3 x 1 = 3 Marks)

18. a) Compound/ serpentine layering (1x ½ = ½ Mark)

b)Used to get several seedlings from one branch at once. (1x 1 =1 Mark)

c) To allow roots to emerge from the cut point. (1x 1 =1 Mark)

d) ➲ Relative humidity.
➲ Leaf area.

- ➲ Temperature.
- ➲ Light intensity.
- ➲ Chemical treatment.
- ➲ Oxygen supply. ***(mark first 4)*** (4x 1 =4 Marks)

Section C (40 Marks)

19. a) ✶ Decomposes and increases soil fertility.
- ✶ improves water holding capacity of the soil.
- ✶ provides food and shelter for soil living organisms.
- ✶ Moderates soil temperature.
- ✶ Smoothers weed.
- ✶ Buffers the soil PH.
- ✶ Increases soil microbial activities.
- ✶ Maintains soil structure.
- ✶ Cheap compared to inorganic fertilizers.
- ✶ Improves the soil structure. (10x 1 =10 Marks)

b) ➢ Type of feed eaten.

- ➢ Age of the farm animal.
- ➢ method of storage.
- ➢ Types of bedding material used in the animal house.
- ➢ Type of animal kept by the farmer.
- ➢ Storage period/ Age of the manure. (6x 1 =6 Marks)

c) ▪ Requires a lot of labor to prepare and transport.

- ▪ Has low nutrient content compared to inorganic fertilizers.
- ▪ May spread weed seeds into the crop field.
- ▪ May introduce crop pest and diseases onto the field crops. (4x 1 =4 Marks)

20. a) ➢ Types of rooting system.
- ➢ Pest and disease attack.
- ➢ Crop nutrient requirement i.e. heavy feeders or low feeders.
- ➢ Legumes and non-legumes.
- ➢ Crops associated with specific weeds e.g. the grass family is affected the striga species.
- ➢ Fallow period should be included. (6x 1 =6 Marks)

b) ▪ Drying cereals to reduce rotting.

- ▪ Threshing /shelling.
- ▪ Cleaning/winnowing.
- ▪ sorting and grading.
- ▪ Dusting with chemicals.
- ▪ Packaging. Packing.
- ▪ Storage. (6x 1 =6 Marks)

c) ✓ Clean the store.
- ✓ Repair leaking roof.
- ✓ Put rat guards on granary stands.
- ✓ Provide racks for placing bags on the floor.
- ✓ Clear the vegetation around.
- ✓ Dusting with pest cides (4x 1 =4 Marks)

d) • Thin extra suckers to leave 3 -6 suckers per stool.

- Trim dry and damaged leaves.
- Weed around the base of the stool.

- Create a basin at the basin of the stool for water to collect.
- Control pests e.g. banana weevil and diseases.
- Prop the tall varieties to prevent lodging or bending.
- Apply manure or compound fertilizer at the rate of 200 gm per stool at the onset of rains.

(4x 1 =4 Marks)

21. a) ✓ Ponds/Dams/Weirs.
✓ Roof catchment.
✓ Rock catchment.
✓ Retention ditches/Level terraces.
✓ Tanks. (5x 1 =5 Marks)

b) ✓ Continuous cropping.
✓ Burning as a method of land cleaning.
✓ Ploughing down the slope.
✓ Deforestation/ cutting down the trees.
✓ Cultivating along/near river banks.
✓ Overgrazing/Overstocking.
✓ Cultivating when then soil is too dry or too wet. (5x 1 =5 Marks)

c) ▪ Mulching to reduce the speed of runoff.

▪ Control farming.
▪ Terracing.
▪ Planting trees/ afforestation to hold soil particles together.
▪ Establishing trash lines to slow the speed of run-off. (5x 2 =10 Marks)

KATHIANI SUB – COUNTY FORM FOUR ENTRANCE EXAMINATION

443/1

AGRICULTURE PAPER 1

MARKING SCHEME

Section A

1. ♦ Purchasing/ Buying.
♦ Inheritance.
♦ As compensation.
♦ Payments of debts. (4x ½ =2 Marks)
2. • Soil structure.
• Soil texture.
• Soil water.
• Soil Ph.
• Soil aeration.
• Soil drainage. ***(mark first 4)*** (4x ½ =2 Marks)
3. a) The process of influencing branches to form roots while still attached to the main plant/mother plant. (1x 1 =1 Marks)

b) ⇒ Early maturity
⇒ Good harvesting
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   b) Combination of various methods of pest control such as physical, chemical, biological and cultural methods. (1x 1 =1 Mark)

6. – Light intensity
   - Wave Length.
   - Light duration. 2 x ½ = 1mark

7. ⇒ Maintains soil moisture
⇒ Conserves soil moisture.
⇒ Avoids root damage.
⇒ Reduces the cost of seedbed preparation.
⇒ Reduces soil erosion e.g. where mulching is applied. (4x ½ =2 Marks)

8. a)
   - Broad based terraces.
   - Narrow based terraces.
   - Bench terraces.
   - Fanya juu terraces. (4x ½ =2 Marks)

b) Open ditches/ canals/ furrows.

Underground pipes.

French drains.

Cambered beds.

Pumping out water.

Planting trees with high rate of transpiration e.g. Eucalyptus. ***(mark first 4)*** (4x ½ =2 Marks)

9. – Mass production of propagules/plantlets.
– It can be used to rescue a damaged crop.
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10. - If it's a gift.
- Where there is no alternative. (1x1=1Mark)

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- Organic manures/FYM/Composite manure/Green manure.

- Fixation by lightning.

- Fixation of nitrogen by Nitrogen fixing bacteria. (4x ½ =2 Marks)

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- Minimises land disputes.

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- Method of preparation.

- Age of silage.
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b) - To avoid wastage.

- To preserve and ensure supply of feed throughout the year.

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(3x ½ =1 ½ Marks)

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analysis. 1 mark

b) i) N – Traverse method.

M – Zigzag method. (2x ½ =1 Mark)

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- Avoid contamination of the sample by using polythene papers.

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- Avoid recently fertilized soil. (3x ½ =1 ½ Marks)

16. a) Sorghum (1x 1 =1 Mark)
b) - Stalkborer
- Shoot fly.
- Midges. 1x2 =2marks
c) - Trapping
- Scaring

- Poisoning the birds.
- Covering the heads with polythene papers. (2x 1 =2 Marks)

d) - High nutrient content.
- High leaf-stem ratio. (2x 1 =2 Marks)

17. Area of plot.
5M x5M =25M^2 √
1 ha = 10,000M^2
10,000 M^2 – 200 kg
Therefore, 25 $\frac{M2 = 25 \times 200}{10,000}$ √
=0.5 Kg √ (3 x 1 = 3 Marks)

18. a) Compound/ serpentine layering (1x ½ = ½ Mark)

b)Used to get several seedlings from one branch at once. (1x 1 =1 Mark)

c) To allow roots to emerge from the cut point. (1x 1 =1 Mark)

d) ➲ Relative humidity.
➲ Leaf area.
➲ Temperature.
➲ Light intensity.
➲ Chemical treatment.
➲ Oxygen supply. ***(mark first 4)*** (4x 1 =4 Marks)

Section C (40 Marks)

19. a) ✶ Decomposes and increases soil fertility.
✶ improves water holding capacity of the soil.
✶ provides food and shelter for soil living organisms.
✶ Moderates soil temperature.
✶ Smoothers weed.
✶ Buffers the soil PH.
✶ Increases soil microbial activities.
✶ Maintains soil structure.
✶ Cheap compared to inorganic fertilizers.
✶ Improves the soil structure. (10x 1 =10 Marks)

b) ➢ Type of feed eaten.

➢ Age of the farm animal.
➢ method of storage.
➢ Types of bedding material used in the animal house.

- Type of animal kept by the farmer.
- Storage period/ Age of the manure. (6x 1 =6 Marks)

c) ▪ Requires a lot of labor to prepare and transport.

- Has low nutrient content compared to inorganic fertilizers.
- May spread weed seeds into the crop field.
- May introduce crop pest and diseases onto the field crops. (4x 1 =4 Marks)

20. a) ➢ Types of rooting system.
- Pest and disease attack.
- Crop nutrient requirement i.e. heavy feeders or low feeders.
- Legumes and non-legumes.
- Crops associated with specific weeds e.g. the grass family is affected the striga species.
- Fallow period should be included. (6x 1 =6 Marks)

b) ▪ Drying cereals to reduce rotting.

- Threshing /shelling.
- Cleaning/winnowing.
- sorting and grading.
- Dusting with chemicals.
- Packaging. Packing.
- Storage. (6x 1 =6 Marks)

c) ✓ Clean the store.
- ✓ Repair leaking roof.
- ✓ Put rat guards on granary stands.
- ✓ Provide racks for placing bags on the floor.
- ✓ Clear the vegetation around.
- ✓ Dusting with pest cides (4x 1 =4 Marks)

d) • Thin extra suckers to leave 3 -6 suckers per stool.

- Trim dry and damaged leaves.
- Weed around the base of the stool.
- Create a basin at the basin of the stool for water to collect.
- Control pests e.g. banana weevil and diseases.
- Prop the tall varieties to prevent lodging or bending.
- Apply manure or compound fertilizer at the rate of 200 gm per stool at the onset of rains.

(4x 1 =4 Marks)

21. a) ✓ Ponds/Dams/Weirs.
- ✓ Roof catchment.
- ✓ Rock catchment.
- ✓ Retention ditches/Level terraces.
- ✓ Tanks. (5x 1 =5 Marks)

22. ✓ Continuous cropping.
- ✓ Burning as a method of land cleaning.
- ✓ Ploughing down the slope.
- ✓ Deforestation/ cutting down the trees.
- ✓ Cultivating along/near river banks.
- ✓ Overgrazing/Overstocking.
- ✓ Cultivating when then soil is too dry or too wet. (5x 1 =5 Marks)

c) ▪ Mulching to reduce the speed of runoff.

- Control farming.

- Terracing.
- Planting trees/ afforestation to hold soil particles together.
- Establishing trash lines to slow the speed of run-off. (5x 2 =10 Marks)

Name: …….. Index No. ……

Date: ……. Candidate's Sign. …….....

443/1

AGRICULTURE

Paper 1

September, 2013

Time: 2 Hours

KHWISERO DISTRICT JOINT EVALUATION EXAM

Kenya Certificate of Secondary Education (K.C.S.E.)

AGRICULTURE

Paper 1

September, 2013

Time: 2 Hours

INSTRUCTIONS TO THE CANDIDATES:

(a) Write your **name, index number** and **school** in the spaces provided above.

(b) **Sign** and write the **date** of examination in the spaces provided.

(c) This paper consists of **Three** Sections: **A, B** and **C**.

(d) Answer **ALL** the questions in section **A** and **B** and any **TWO** questions from section **C**.

(e) Answers should be written in the spaces provided.

(f) This paper consists of **11**printed pages.

(g) Candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiners' Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A		30	
B		20	
C		20	
		20	
		90	

This paper consists of 11 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (30 MARKS)

Answer ALL the questions in this section in the spaces provided

1. Define the term organic farming (1mk)

   ……

   ……

2. Distinguish between the terms nitrogen fixation and phosphorous fixation in soil fertility (2mks)

   ……

   ……

3. Give the functions of the following during compost manure preparation (1½mks)

   (i) Top soil ……

   (ii) Wood ash …….

   (iii) Well rotten manure …….. ……..

4. Define the term land reclamation (1mk)

   …….

   …….

5. State **three** advantages of using drip irrigation (1½ mks)

   …….

   …….

   …….

6. Name **two** cabbage varieties that are late maturing (1mk)

   …….

7. A field of maize requires 120kg/ha of phosphorus pentoxide (P_2O_5). A compound fertilizer 20:20:10 is to be used in the filed. Calculate the amount of the compound fertilizer required for 0.4 ha of the land (show your working). (2mks)

   ……..

   ……

   ……

8. State **three** farming activities that minimize water pollution (1½ mks)

   …….

   ……

   ……....

9. Differentiate between the following terms:-

   (i) Fixed input and variable input (1mk)

   ……

   ……

   (ii) Journal and ledger book (1mk)

……

……...

10. State **four** factors contributing to competitive ability of weeds. (2mks)

……

……

……..

11.(a) Define the term land reform (½ mk)

……

(b) List **three** methods of land reform (1½mks)

……

……

……

12. State **four** reasons for keeping livestock health records. (2mks)

……

……

……

13. Outline **three** reasons for treating water. (1½mks)

……

……

……

14. Give **two** importance of carrying out the following ternary land operations.

(i) Rolling (1mk)

……

……..

(ii) Leveling (1mk)

……

……

15. State **three** advantages of zero grazing. (1½ mks)

……

……

16. List **three** activities carried out during land clearing. (1½ mks)

……

……

17. State **three** reasons for planting crops at correct spacing (1½ mks)

……

……

18. Give **two** benefits of conserving forage crops (1mk)

……

……

19. Identify **four** activities carried out by Young Farmers Clubs in Kenya (YFCK). (2mks)

SECTION B (20 MARKS)

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

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

A

B

(a) Identify the pests in the diagram labeled **A** and **B** (1mk)

A ……

B ……...

(b) At what stage of maize production does each pest damage the crop? (2mks)

A ……

B ……

(c) Give **one** way of controlling each of the pests in the field. (2mks)

A ……...

……..

B ……

……

21. (a) State the law of diminishing returns in a production process (1mk)

……

……..

(b) Use the information on the table below to answer the questions that follow.

ertilizer input (units)	**Mai ze yield (bags)**	**M arginal product (bags)**
	50	
	62	1 2

	66	4
	68	2
	69	1
	69	0

The cost of fertilizer is sh. 1500 per unit and price of maize is sh.1200per bag.

(i) At what unit of fertilizer input should the farmer be advised to stop applying any more fertilizer to the maize? (1mk)

……

……

(ii) Calculate the marginal return at the point optimum production (1mk)

.....

.....

22.(a) Describe the procedure which should be followed in spacing a crop of tomatoes using a fungicide in powder form, water and knapsack sprayer. (3mks)

……

……

……..

(b) Name one fungal disease of tomatoes that can be controlled using above procedure. (1mk)

……....

(c) State four safety measures that can be taken while spraying the crop with the fungicide. (2mks)

……..

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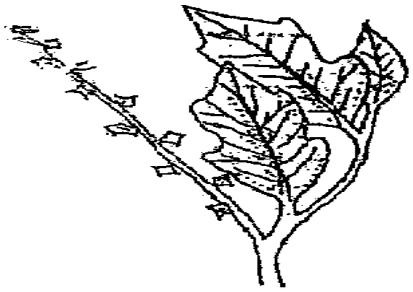
……..

23. The diagram below shows a common weed found in the field during crop production.



(a) Identify the weed (1mk)

.....

.....

(b) Why is it difficult to control weed? (1mk)

.....

(c) State harmful effects of the weed (3mks)

.....

.....

.....

SECTION C (40 MARKS)

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

24.(a) Describe the establishment of carrots under the following subheadings.

(i) Land preparation (5mks)

(ii) Establishment (5mks)

(b) State **ten** steps a farmer should follow when planning a farm business. (10mks)

25.(a) Describe the method and procedure of harvesting coffee (5mks)

(b) State **five** farming activities which may encourage soil erosion (5mks)

26 (a) Describe the production of Lucern (medicago satwa) under the following sub headings:

(i) Establishment (5mks)

(ii) Management (3mks)

(iii) Utilization (2mks)

(b) Give **five** roles of calcium in plants. (5mks)

(c) Explain **five** function of a farm manager. (5mks)

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Name: ………………………………………………………… Index No ………………………………………

Candidate's Sign ……………………………….

Date: ……………………………….

443/2

AGRICULTURE

Paper 2

September 2013

Time: 2 Hours

KHWISERO DISTRICT JOINT EVALUATION EXAM

Kenya Certificate of Secondary Education (K.C.S.E)

Agriculture

Paper 2

2 Hours

INSTRUCTIONS TO CANDIDATES:

- *Write **your name**, **index number** and **school** in the spaces provided.*
- *Sign and write the date of the examination in the spaces provided.*
- *This paper consists of **three** sections; **A, B** and **C.***
- *Answer **all** questions in section **A** and **B.***
- *In section **C** answer any **two** questions in the spaces provided*
- *All answers **must** be written in the spaces provided.*

For Examiner's Use Only;

SECTION	QUESTION	MAXIMUM SCORE	CANDIDATES' SCORE
A	1 - 20	30	

B	16 – 19	20	
C		20	
		20	
	Total	**90**	

This paper consists of 8 printed pages. Candidates should check the question paper to ascertain that all pages are printed as indicated and that no questions are missing

SECTION A (30 MARKS)

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

1. State **two** reasons why drenching alone is not an effective method of controlling liver fluke. (1mk)

……
……

2. Name **two** diseases in livestock that may be spread through breeding. (1mk)

……
……

3. Name **two** elements that may be connected to power take off shaft (P.T.O) on a tractor. (1mk)

……
……

4. State **two** causes of soft shells in eggs. (1mk)

……
……

5. State the functions of each of the following components in a tractor engine. (2mks)

(a) Carburetor……

(b) Spark plug……

(c) Ignition coil……

(d) Lift pump …….

6. If a broiler consumes 10kg of feed from hatching to slaughter calculate its feed conversion ratio if by slaughter time it weighs 2kg. (1mk)

7. State **two** physiological adaptations of camel to its environment. (1mk)

……
……

8. Give **two** factors that determine the nutrients requirements of cattle. (1mk)

……

……

9. State **three** uses of a spike tooth harrow. (1 ½ mks)

……

……

……

10. State **four** factors considered when selecting boars for breeding. (2mks)

……
……

……

……

11. List **three** control measures of East coast fever (**E.C.F**) (1 ½mks)

……

……

……

12. State **one** use of each of the following tools. (1 ½mks)

(a) Mansons trowel:……..

(b) Garden trowel:……

(c) Stock and die:……

13. **Differentiate** between a broiler and a capon. (2mks)

Broiler:……..

……..

Capon:……..

……..

14. **State four** visible symptoms of round worms' infestation in cattle. (2mks)

……

……

……

……..

15. **Suggest four** reasons why a farmer would prefer the use of embryo transplant to serve livestock over other methods (2mks)

……..

……..

16. **Give three** benefits a farmer gets by dehorning his cattle. (1 ½mks)

……..

……..

……..

17. (a) **Define** the term zoonotic diseases. (1mk)

……
……

(b) **Name two** zoonotic diseases. (1mk)

……

……

18. Name **two** species of fresh warm water fish. (1mk)

……
……..

19. (a) **What** does the ratio 1 : 2 : 3 stand for as used in concrete block making. (1 ½ mk)

……
……

(b) State **three** advantages of using concrete blocks as building materials. (1 ½ mks)

……
……

……

(c) State **two** uses of concrete blocks in the farm. (1mk)

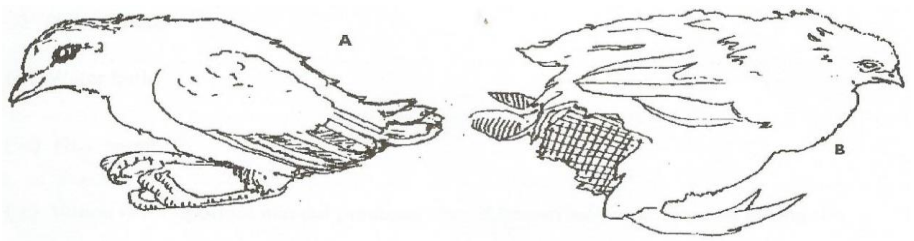
……

……

SECTION B (20MARKS)

Answer all the questions in the spaces provided

20. Below are two diagrams of young chicks **A** and **B** showing deficiency of certain nutrients. Identify the nutrients the two chicks are lacking. (1mk)



(a)**A** ……

B ……

(b) Suggest **two** sources of nutrients chick **B** is lacking. (2mks)

……

……

(c) State the condition chick **B** is suffering from. (1mk)

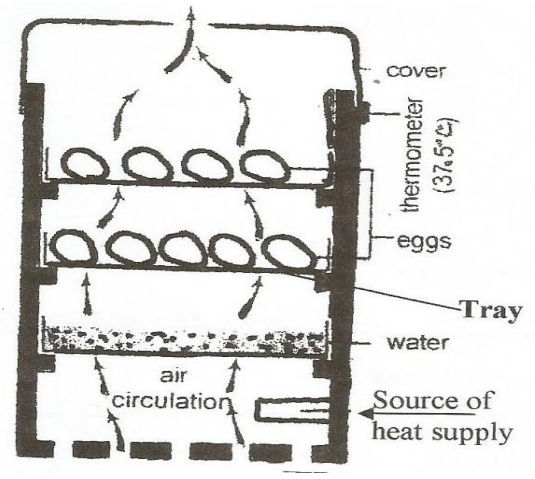
……

(d) Other than the condition shown in chick **B** above, give **two** other symptoms of the deficiency. (2mks)

……

……

21. Study the illustration below carefully then answer the questions that follow.



(a) Name the equipment represented by the diagram. (1mk)

……

(b) Give **one** reason for placing the following inside the equipment. (3mks)

(i)Thermometer:……..

(ii)Water bath:……..

(iii)Heat supply:……

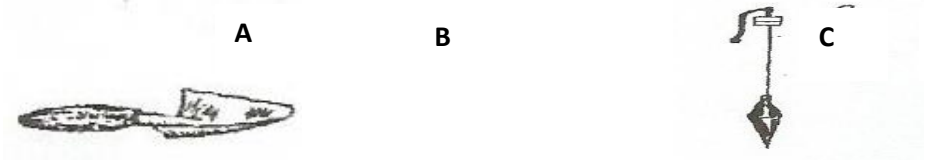
(c) Which **two** important manual practices should be carried out before and during the ongoing process? (1mk)

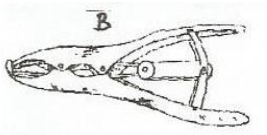
……

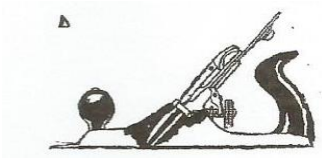
……

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

A **B** **C** **D**







(a) Identify the tools. (2mks)

A ……

B ……

C ……

D ……

(b) State the correct use of each of the tools above. (2mks)

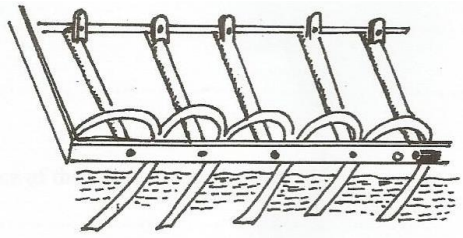
Tool	Use
A	
B	
C	
D	

(c) Give **two** maintenance practices carried out on tool **D** for efficient use. (1mk)

……..

……..

23. The diagram below shows a farm implement. Use it to answer to answer the questions that follow:



(a) Identify the implement. (1mk)

……

(b) **State TWO** functions of the implement on the farm during land preparation. (2mks)

……
……..

(c) List **FOUR** maintenance practices carried out on the implementation. (2mks)

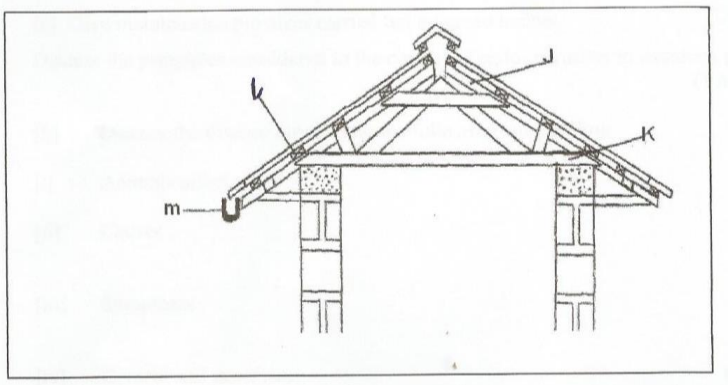
……

……

……

……

24. Study the illustration below and answer the questions there after.



(a) Identify the parts labeled **J**, **K**, **L** and **M**. (2mks)

J ……

K ……

L ……

M ……

(b) State **two** uses of the part labeled '**L**' (1mk)

……
……

(c) State **two** reasons why it is important to have the structure labeled **M**, at the edge of the roofing materials. (1mk)

……
……

SECTION C: (40MARKS)

Answer TWO questions from this section.

25. (a) Discuss management of fish under the following sub-headings?

(i) Stocking fish pond (3mks)

(ii) Feeding (4mks)

(iii) Processing (3mks)

(b) (i) What is a green house? (2mks)

(ii) Name **four** materials used in green house construction. (4mks)

(c) Give maintenance practices carried out on green houses. (4mks)

26. (a) Discuss the principles considered in the control of endo- parasite in livestock production. (10mks)

(b) Discuss the diseases bloat under the following sub-heading.

(i) Animals affected. (3mks)

(ii) Causes (2mks)

(iii) Symptoms (3mks)

(iv) Control and treatment (2mks)

27. (a) Discuss the management practices that are necessary for improving production in goats. (10mks)

(b) State the functions of the following components of the Electrical system of a tractor.

(i) Battery (3mks)

(ii) Generator / Dynamo (2mks)

(iii) Starter motor (2mks)

(iv) Cut out (3mks)

NAME ……..…….. DATE ……

INDEX NO. …….…….…..…..… CANDIDATE'S SIGNATURE ……..…..……..

443/1
AGRICULTURE
PAPER 1 (THEORY)
OCTOBER / NOVEMBER 2013
TIME: 2 HOURS

KILUNGU DISTRICT 2013

FORM FOUR ENTRANCE EXAMINATION

Kenya Certificate of Secondary Education

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

11. Write your name and index number in the spaces provided above.
12. This paper consists of **THREE** sections: A , B and C
13. Answer **ALL** the questions in sections A and B and any **TWO** questions in section C
14. ALL answers **MUST** be written in the spaces provided.
15. Do not remove any pages from this booklet.
16. This paper consists of 8 printed pages.
    Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	**01-18**	**30 marks**	
B	**19-21**	**20 marks**	
C		**40 marks**	

	Total score	

Kilungu District Form Four Entrance Examination
443/1
Agriculture
Paper 1

SECTION A (30 MARKS)

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

1. Give two factors that influence planting depth of crops (1mark)

   ……

   ……..

2. Give two benefits of correct plant population in annual crops (1mark)

   ……

   ……..

3. State two ways through which one would acquire land (1mark)

   ……

   ……..

4. List four disadvantages of overhead irrigation (2marks)

   ……

   ……..

   ……

   ……..

5. (a) What is solifluction? (1mark)

   ……

   ……

(b) State two factors affecting solifluction (1mark)

   ……

   ……

6. State three ways by which biological agents can enhance the process of soil formation (1½ marks)

   ……

   ……

   ……

7. State four advantages of adding organic manure to sandy soil (2marks)

   ……

   ……

   ……

   ……

8. State 2 forms in which nitrogen is absorbed by crops (1mark)

……

……

9. State 4 ways of harvesting water in the farm. (2marks)

……

……

……

……

10. State 2 roles of good soil aeration in crop growth (1mark)

……

……

11. Outline three reasons for root pruning in agroforestry seedlings (1½ marks)

……

……

……

……

12. State two reasons why settlement schemes were established in Kenya (1mark)

……

……

13. State two factors that must be considered when constructing cut off drains (1mark)

……

……

14. State two effects of low temperature on crop production (1mark)

……

……

15. (a) What is land fragmentation in farming (1mark)

……

……

(b) State two causes of land fragmentation in Kenya since independence (1mark)

……

……

16. List four benefits that a farmer may derive agro-forestry trees (2marks)

……

……

……

……

17. Give 4 factors that determine the number of times secondary cultivation is done on a seed bed. (2marks)

……

……

……

……

18. Give the meaning of the following field practices carried out on a nursery bed.

(a) Pricking out (1mark)

……

……

(b) Hardening off (1mark)

……

……

19. State four disadvantages of using agro-chemicals in crop production (2marks)

……

……

……

……

20. Give two reasons as to why agriculture is said to be an art (1mark)

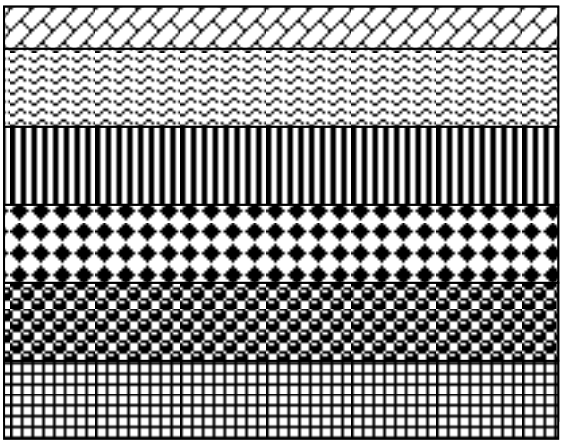
……

……

SECTION B. (20 MARKS)

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

21. The diagram below is a presentation of a cross section through a compost heap. Study it and answer questions that follow



a) (i) Name the part labeled 1 – 6 (3marks)

……

……

……

……

(ii)Give the importance of 5, 4 and 3 (3marks)

……

……

……

……

b) Why is it advisable that;

i) A long sharp pointed stick is driven into the heap at an angle (1mark)

……

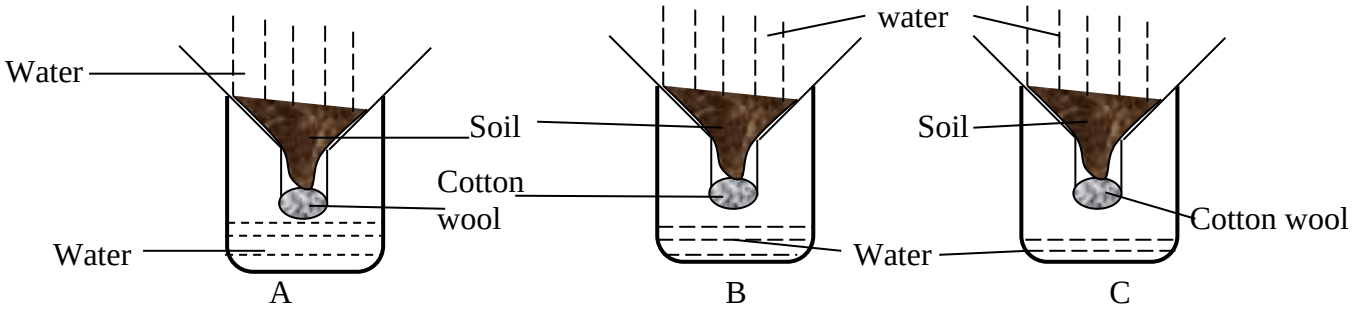
……

ii) A compost pits are preferably done in drier areas (1mark)

……

……

22. The diagram below shows an experiment set up using different soil types A, B and C. the observation is made after 24 hours.



a) State what the experiment was designed to study (1mark)

……

……

b) Name the soil type labeled A, B and C (3marks)

……

……

c) State three ways in which soil structure influences crop production (3marks)

……

……

……

……

23. The illustration below shows two broad varieties of tomato

a) Identify the two broad varieties (2marks)

J –

……

K-

……..

b) State two characteristics of K which makes them popular amongst farmers (2marks)

……

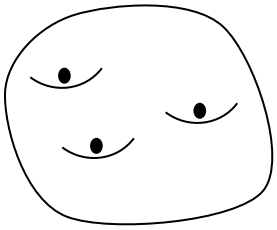
……

c) Give one major reason as to why a farmer may opt to produce variety J. (1mark)

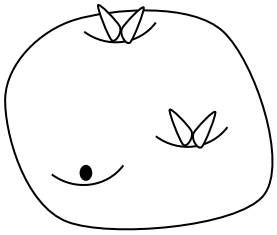
……

……

24. Below are diagrams of irish potato tubes after being subjected to some conditions in preparation for planting



Before subjecting to the conditions



After subjecting to the conditions

a) Which process of potato treatment is illustrated above? (1mark)

……

……

b) State two conditions necessary for the above process (1mark)

……

……

c) Give two reasons for carrying out the above practice (1mark)

……

……

SECTION C (40 MARKS)

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

25. (a) Discus five importance of crop rotation (10marks)

(b) Explain five factors determining the stage and time of harvesting crops (10marks)

26. (a) Discuss five qualities of good silage (5marks)

(b) Discus the advantages and disadvantages of overhead irrigation (8marks)

(c) Outline the safety measures in the use of chemicals to minimize environmental pollution (7marks)

27. (a) Explain 10 cultural measures used in the control of weeds in a field of a named cereal crop (10marks)

(b) Explain six physical or structural methods of soil erosion control (6marks)

(c) State four characteristics of a fertile soil (4marks)

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NAME …….. **DATE** ……..……..……

ADMN NO. ……..……..……..…..… **CANDIDATE'S SIGNATURE** ……..…..……..

443/2
AGRICULTURE
PAPER 2 (THEORY)
OCTOBER / NOVEMBER 2013
TIME: 2 HOURS

KILUNGU DISTRICT
FORM FOUR ENTRANCE JOINT EXAMINATION

Kenya Certificate of Secondary Education

443/2
AGRICULTURE
PAPER 2 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

17. Write your name and index number in the spaces provided above.
18. This paper has **THREE** sections: A , B and C
19. Answer **ALL** the questions in section A and B and any **TWO** questions in section C
20. ALL answers **MUST** be written in the spaces provided.
21. Do not remove any pages from this booklet.
22. This paper consists of 8 printed pages.
    Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

	Questions	**Maximum score**	**Candidate's score**
A	**01-17**	**30 marks**	
B	**18-22**	**20 marks**	
C	**23-25**	**40 marks**	
		Total score	

Kilungu District Form Four Entrance Joint Examination
443/2
Agriculture
Paper 2

SECTION A (30 MARKS)

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

1. Name the:
   a) Bacteria that causes anthrax in cattle (1mark)

   ……

   ……..

   b) Protozoa that causes gall sickness in cattle (1mark)

   ……

   ……..

2. Give four qualities of creep feed (2marks)

   ……

   ……..

   ……

   ……

3. Name the tool used together with each of the following tools (2marks)
   a) Canular

   ……

   b) Wood chisel

   ……

   c) Screw driver

   ……

   d) Brace

   ……

4. Give two harmful effects of fleas in poultry (1mark)

   ……

   ……..

5. Name four structural features in a fish pond (2marks)

   ……

   ……..

   ……

   ……..

6. (a) What is dry cow therapy (1mark)

   ……

   ……..

   (b) When is dry cow therapy carried out? (1mark)

   ……

   ……..

7. State four factors that determine the nutrient requirement in cattle (2marks)

……

……..

……

……..

8. Give two reasons for carrying out each of the following routine management practices
   a) Docking in sheep rearing (1mark)

   ……

   ……

   b) Tooth clipping in piglet (1mark)

   ……

   ……

9. Define the term hybrid vigour in livestock breeding (1mark)

……

……

10. State two functions of foot bath in cattle dip (1mark)

……

……

11. State two disadvantages of using barbed wire in the farm (1mark)

……

……

12. State three tools that are required when transplanting vegetable seedlings (1½ marks)

……

……

……

13. Give three maintenance practices of knapsack sprayer (2marks)

……

……

……

14. Name two factors that dictate the description of livestock in Kenya (1mark)

……

……

15. State two methods of bloodless method of castrating bull calves (1mark)

……

……

16. State six predisposing factors of livestock diseases other than injury (3marks)

……

……

……

……

……

……

17. Name two methods of mating (1mark)

……

……

18. (a) What is a notifiable disease? (1mark)

……

……

(b) Name any two notifiable disease (1mark)

……

……

19. Give two uses of droppers in fencer (1mark)

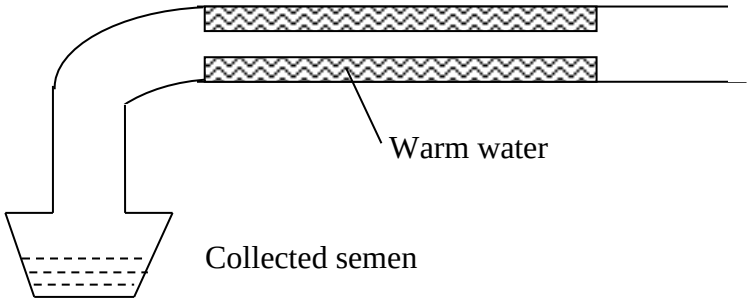
……

……

SECTION B (20 MARKS)

Answer all questions in this section.

20. The illustration below shows a livestock production equipment. Study it carefully and answer questions that follow



a) Identify the equipment. (1mark)

……

……

b) What is the importance of warm water in the equipment (1mark)

……

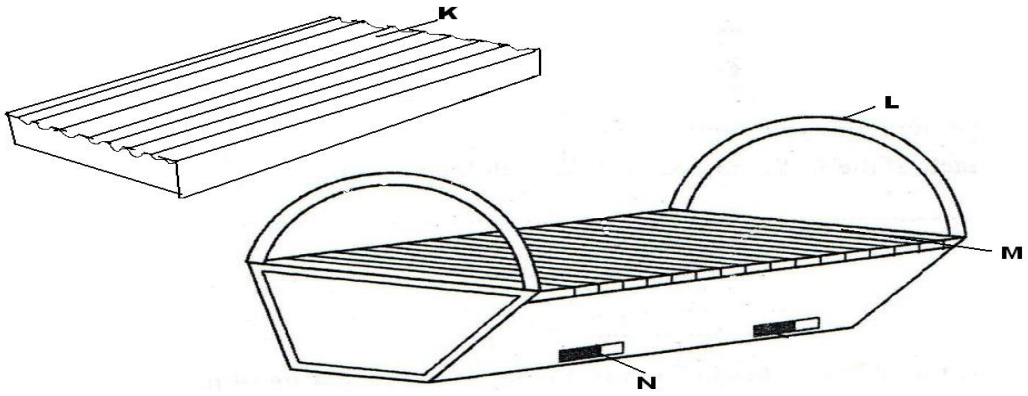
……

c) Describe the procedure followed when using the equipment in collecting the semen. (2marks)

……

……

21. The diagram below illustrates a bee hive. Study it carefully to answer questions that follow



a) Name the bee hive (1mark)

……

……

b) Identify the parts labeled L and M (1mark)

……

……

(c) State the functions of the part labeled K and N (1mark)

……

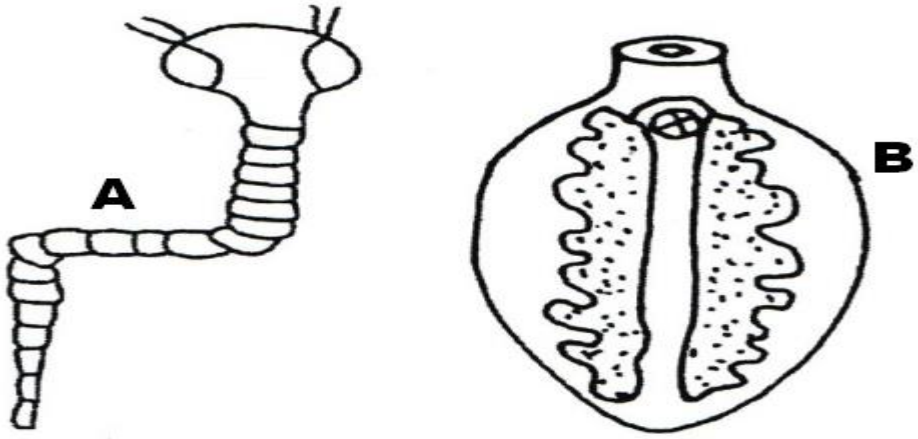
……

c) Name the tool used for detaching honey combs during honey harvesting (1mark)

……

……

22. Study the illustrations below and answer questions that follow.



a) Identify the specimen (1mark)

……

……

b) State the intermediate host of A and B (1mark)

……

……

c) State the final host of A and B (1mark)

……

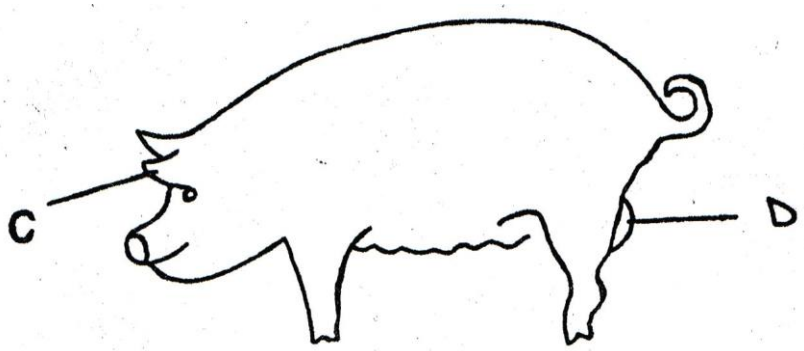
……

d) Explain any three control measures of A (3marks)

……

……

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



a) Name the operation usually carried out on part C (1mark)

……

……

b) Why is the activity in (a) above necessary? (1mark)

……

……

c) Give two ways of carrying out the operation named in (a) (2marks)

……

……

d) Name the routine management practice carried out in part D (1mark)

……

……

e) Name the method used in carrying out the routine management practice carried out on part D (1mark)

……

……

SECTION C. 40 MARKS.

Answer any two questions from this section.

24. Describe the measures used to control livestock diseases in the farm and give disease controlled in each case (20marks)
25. (a) Describe the management of piglet from birth up to winning (10marks)
    (b) Describe the factors considered when siting farm structures in the farm (10marks)
26. (a) Outline any ten general methods of maintaining farm tools, equipment, implements and machines (10marks)
    (b) Describe the lifecycle of a two host tick (7marks)
    (c) Name any three tick borne diseases (3marks)

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KILUNGU DISTRICT
MARKING SCHEME 443/1
AGRICULTURE
PAPER 1
THEORY

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1. Factors influencing planting depth of the crops
- ✓ Soil type
- ✓ Soil moisture content
- ✓ Size of the seed
- ✓ Type of germination — 2 x ½ (1 mk)

2. Benefits of correct plant population in annual crops
- ✓ High quality produce
- ✓ High yields/production/quality yields
- ✓ Eases weed control
- ✓ Aids in soil and water conservation
- ✓ Eases control of pests and diseases — (2 x ½) (1 mk)

3. Ways through which one may acquire land
- ✓ Inheritance
- ✓ Settlement by the government
- ✓ Buying
- ✓ Compensation
- ✓ Leasehold/tenancy
- ✓ Gifts and donations — (2 x ½) (1 mk)

4. Disadvantages of overhead irrigation
- ✓ Expensive to install and maintain
- ✓ Promotes fungal diseases
- ✓ May encourage erosion on sloppy land
- ✓ Wastage of water — (2 x ½) (1 mk)

5. (a) **Solifluction**

Gravitational flow of surface material saturated with water — (1 mark)

b) **Factors affecting solifluction**
- ✓ Slope of the land
- ✓ Nature of the material
- ✓ Climate
- ✓ Vegetation cover
- ✓ Human activities
- ✓ Forces within the earths crust — (2 x ½ = 1mk)

6. Ways by which biological agents can enhance the process of soil formation
- ✓ Decomposition of plants and animals remains by soil micro organisms
- ✓ Roots applying pressure on rocks as they penetrate through the soil
- ✓ Mans activities e.g. cultivation and mining
- ✓ Mixing up of soil burrowing animals e.g. worms and termites
- ✓ Pressure exerted on rock by large animals as they walk — 3 x ½ = 1 ½ marks

7. **Advantages of adding organic manure to sandy soil**
   - ✓ Adds nutrients
   - ✓ Increases microbial activity in the soil
   - ✓ Improves water holding capacity
   - ✓ Buffers soil PH
   - ✓ Moderates soil PH
   - ✓ Moderates soil temperature — 4 x ½ = 2 marks
8. **Forms in which nitrogen is absorbed by plants**
   - ✓ Ammonium ions - NH_4^+
   - ✓ Nitrate ions – NO_3- — (2 x ½ = mk)
9. **Ways of harvesting water in the farm**
   - ✓ Roof catchment
   - ✓ Rock catchment
   - ✓ Dams
   - ✓ Weirs
   - ✓ Gabion/ check dams
   - ✓ Ponds
   - ✓ Retention ditches — (4 x ½ mk)
10. **Roles of good soil aeration in crop growth**
    - ✓ Root respiration/ facilitate growth of crop roots
    - ✓ Micro organism are provided with oxygen for respiration
    - ✓ Gaseous exchange carbon (iv) oxide is given out than the soil and oxygen in the soil. (2 x ½ mk)
11. **Three reasons why root pruning in agro-forestry seedlings is done**
    - ✓ Minimize damage to seedlings during transplanting of seedlings
    - ✓ Seedlings to develop strong short and dense root systems
    - ✓ Easier to lift seedlings during transpiration
    - ✓ Encourage lateral root development that enhances survival rate of seedlings after transplanting

    (3 x ½ = 1 ½ mks)
12. **Reasons why land settlement schemes were established in Kenya**
    - ✓ Transfer land from white settlers to Africans
    - ✓ Ease population pressure in African reserves
    - ✓ To settle former employee of European farmers
    - ✓ Solve unemployment problems
    - ✓ Increase agricultural production through better method of land utilization
    - ✓ Maintain production levels achieved by the settlers (2 x ½ = 1 mk)
13. **Factors considered when constructing cut-off drains**
    - ✓ Where water is to be discharged
    - ✓ Volume of water (2 x ½ = 1 mk)
14. **Effects of low temperature on crop production**
    - ✓ Slows growth rate
    - ✓ Can encourage disease spread and infection
    - ✓ Improves the quality of some crops e.g. chemical content in tea and pyrethrum
    - ✓ Lowers quality of some crops e.g. cotton (2 x ½ = 1 mk)

15. (a) **Fragmentation**

    Situation in which a farmer owns several parcels of land in different areas. (1mk)

    (b) **Causes of land fragmentation**

    Inheritance from different ancestors (1mk)
    - ✓ Buying land elsewhere due to pressure on existing land.
    - ✓ Shifting cultivation
    - ✓ Compensation – if government takes ones land (2 x ½= 1mk)
16. **Benefits that a farmer may derive from agro-forestry trees**
    - ✓ Source of wood fuel
    - ✓ Source of income
    - ✓ Aesthetic value
    - ✓ Water catchment
    - ✓ Wind breaks
    - ✓ Source of food to livestock and men
    - ✓ Source of timber
    - ✓ Medicinal value (4 x ½ = 2 mks)

17. Factors that determine the number of times secondary cultivation is done on a seed bed.

- ✓ Sixe of the planting materials
- ✓ Slope of the land
- ✓ Soil moisture content
- ✓ Condition of the soil after primary cultivation (4 x ½ = 2 mks)

18. Meaning of the following field practices

a) Pricking out – Removing of extra seedling from the nursery and transferring them to a seedling bed.

b) Hardening off – Exposing of seedlings while in the nursery bed to the prevailing conditions in the seed bed. (1 mk)

19. Disadvantages of using agro-chemicals in crop production

1. Expensive
2. Poisonous to man and livestock
3. High residual effect
4. Pollute the environment
5. Requires skills to apply (4 x ½ = 2mks)

20. Reasons why agriculture is said to be an art

- ✓ Land tillage
- ✓ Construction of structures
- ✓ Operation of machines (2 x ½ = 1mk)

21. (a) (i)
    1. Foundation materials e.g. maize stalks
    2. Kitchen refuse, leaves, grasses
    3. Farm yard manure / any well rotten manure
    4. Ash / potassium fertilizer
    5. Top soil
    6. Leaves cover / trash (6 x ½ = 3 mks)

    (ii) **Importance of**

    5-Provides source of micro organisms

    4- Enrich the manure with K and P

    3- Provides food for micro organisms that brings about delay (3 mks)

(b) (i) Long sharp pointed stick checks the temp of the manure during its formation to avoid over heating (1mk)

(ii) Done in drier area to prevent entry of too much water causing water logging, poor decomposition and leaching of nutrients. (1 mk)

22. (a) To compare porosity and water holding capacity of soil. (1 mk)

    (b) A - Sandy soil

    B- Loam soil

    C – Clay soil (3 mks)

    (c) - Determine amount of water and air in the soil

    - Determine circulation of air in the soil

    - Influence the water – holding capacity of a soil (3 mks)

23. (a) J- Processing variety

    K- Fresh market variety (2 mks)

    (b) Fast growing

    High yielding (2 mks)

    (c) Good keeping quality (1mk)

24. (a) Chitting/ sprouting (1 mk)

    (b) - Humidity / moist environment

    - Diffuse light (avoid darkness) (2 ½ mk)

    (c) - Ensure uniform growth after selection

    - Ensure growth starts immediately after planting

    - Break seed dormancy (2 x ½ = 1 mk)

25. (a) Importance of crop rotation
    - ✓ Maximize utilization of nutrients
    - ✓ Control soil borne pests and diseases build up
    - ✓ Control weeds
    - ✓ Improve soil fertility
    - ✓ Improve soil structure

- ✓ Control of soil erosion (5 x 2 = 10 mks)

(b) ✓ Prevailing market price/ profits
- ✓ Markets demand
- ✓ Weather conditions
- ✓ Use of the crop
- ✓ Concentration of chemicals (5 x 2 = 10 mks)

26. (a) Qualities of good silage
- Have a pit of 4.2 or below
- Free from moulds and butyric acid
- Greenish to yellow in colour
- Fine textured with no sliminess
- Order of predominance of organic acids should be lactic acid, succinic acid and termic acid
- From high quality, forage and cut at the proper stage of growth (5 x 1 = 5 mks)

(b) **Advantages of overhead irrigation**
- ➲ Water evenly distributed
- ➲ Less wastage of water
- ➲ Practiced on sloppy areas
- ➲ Foliar sprays can be applied with irrigation water reducing
- ➲ Easy to move sprinkler systems from one place to another (4 x 1 = 4 mks)

Disadvantages
- ➲ Expensive to install
- ➲ Encourages fungal diseases e.g blight
- ➲ Causes soil erosion
- ➲ May require establishment of wind breakers
- ➲ Requires skills to maintain (4 x 1 = 4 mks)

(c) **Safety measures in the use of chemicals to minimize environmental pollution**
- → Read manufacturer's instructions
- → Keep herbicides in safe place out of reach of children
- → Wear protective clothing
- → Label containers well to avoid confusion
- → Dispose empty containers properly
- → Never blow blocked nozzles
- → Spray towards the direction of the wind
- → Wash the body thoroughly after spraying
- → Never eat/ drink while spraying
- → Wash spray equipment thoroughly after spraying
- → Don't pour chemical residue into water sources or pastures (7 x 1 = 7 mks)

27. (a) - Proper / correct spacing
- Mulching
- Flooding
- Early planting
- Application of manure and fertilizers
- Crop rotation
- Clean seedbed
- Cover cropping
- Use of clean planting materials
- Timely cultivation (10 x 1 = 10 mks)

(b) - Stone lines
- Trash
- Weirs
- Cut off drains
- Gabions
- Terraces
- Soil bunds

(c) **Characteristics of a fertile soil**
- Properly drained
- Good water holding capacity
- Good depth
- Appropriate PH
- Free from pests and diseases

- Good structure and texture
- High levels of plant nutrients in their suitable proportions

KILUNGU DISTRICT 2013

FORM FOUR ENTRANCE JOINT EXAM

MARKING SCHEME 443/2

AGRICULTURE

PAPER II

THEORY

SECTION A (30MARKS)

1. (a) Bacillus antirasis
   (b) Anaplasma marginale (1 x 1= 1mk)
2.
i) Highly digestive
ii) High in energy value
iii) High in palatability
iv) Have high digestive crude protein
v) Rich in minerals (4 x ½ = 2mks)
3.
   a) Trocat
   b) Mallet
   c) Bit
   d) Screw (4 x ½ = 2mks)
4.
   a) Cause wound
   b) Cause anaemia
   c) Cause irritation
   d) Cause cannibation (2 x ½ = 1mk)
5.
   a) Inlet furrow
   b) Drainage pipe
   c) Strong wall
   d) Dam crest
   e) Spill way (4 x ½ = 2mks)
6. (a) Practice of administering antibiotics in the teat canal to control mastitis in a lactating animal (1 x 1 = 1mk)
   (b) End of lactation period (1 x 1 = 1mk)
7.
   i) Body wt
   ii) Age of the animal
   iii) Level of production
   iv) Sate of heacte
   v) Activity o the animal (2 x ½ = 1mk)
8. (a)
- Facilitate maturity
- Even distribution of fat
- Prevent blowfly infestation
- Prevent fouling of wool
- Prevent contamination of urinary tract (2 x ½ = 1mk)

(b)
- Prevent injury to feet of mother
- Control mastitis
- Prevent piglets from injury each other (2 x ½ = 1mk)

9. Increased performance resulting from crossing into unrelated animals with superior characteristics (1 x 1 = 1mk)
10. (i) Washing the feet of animal before getting in clips wash
    (i) Hold chemical that control foot rot (2 x ½ = 1mk)
11. (i) Cause injury in the animals

(ii) They expensive to establish (2 x ½ = 1mk)

12. (i) Gardeners trowel
    (ii) Garden line for appropriate spacing
    (iii)Fense for digging holes
    (iv)Wheelbarrow to transport seedling
    (v)Shovel for manure (3 x ½ = 1 ½ mk)
13. (i) Clean after use
    (ii)Unblock nozzles
    (iii)Store properly
    (iv)Lubricate pump handle (3 x ½ = 1 ½ mks)
14. (i) Hair or body cover
    (ii)Climatic conditions
    (iii)Place of origin (2 x ½ = 1 ½ mk)
15. (i) Use of burdizzo
    (ii)Use of rubber ring and elastrator pliers (2 x ½ = 1mk)
16. (i) Age of animal
    (ii) Sex of animal
    (iii)Colour of animal
    (iv)Change of climate
    (v)Hereditary
    (vi)Size of herd
    (vii)Physiological condition e.g. fatigue, pregnancy e.t.c (6 x ½ = 3mks)
17. (i) Natural mating
    (ii)Artificial insemination
    (iii)Embryo transplant (2 x ½ = 1mk)
18. (a)A disease whose outbreak must be reported to government authority (1 x 1= 1mk)
    (b) (i)Rinderpest
    (ii) Anthrax
    (iii)Foot and mouth
    (iv)Black quarter
    (v)Rabies (2 x ½ = 1mk)
19. (i)Reinforce barbed wires
    (ii) Prevent small animals from increasing through barbed wire
    (iii)Adds beauty to fence (aesthetic value).

Section B (20mks)

20. (a)Artificial vagina (1 x 1 = 1mk)
    (b)Warm water provides suitable temperature for ejaculation (1 x 1 = 1mk)
    (c)(i)Restrain cow in a crush
    (ii)Grab the penis of the teaser bull when it moulds the cow
    (iii)Direct the penis into the artificial vagina
    (iv)Due to warm water bull ejaculates of semen is collected
    (v)Release the cow and the teaser bull (4 x ½ = 2mks)
21. (a) Kenya topbar hire (1 x 1 = 1mk)
    (b)L- Loop for hanging hive
    M- Top bar (2 x ½ = 1mk)
    (c) K- Cover the hive / top bar
    W- Entrance of bees (2 x ½ = 1mk)
    (c) Hive tool (1 x 1 = 1mk)
22. (a) A- Tapeworm
    B- River fluke
    (2 x ½ = 1mk)
    (b) A- Cattle / pig
    B- Fresh water snail (2 x ½ = 1mk)
    (c) A- Man
    B- Cattle/ goat/ sheep (2 x ½ = 1mk)

(d) (i) Burn pasture to destroy / kill eggs
(ii) Proper cooking of meat to destroy the bladderworm
(iii) Proper inspection of meat to destroy heavily infested carcasses
(iv) Rotational grazing to break their life cycle by destroying eggs

(v) Use of pit latrines to break their life cycle by not exposing eggs to intermediate host
(vi) Ploughing of pasture to bury and destroy embryo with eggs

(3 x 1 = 3mks)

½ mk = statement
½ mk = explanation

23. (a) Identification
(b) So as to record the performance of an individual animal
Eases tracking down the animal (1 x 1 = 1mk)
(c) (i) Ear tagging
(ii) Ear notching
(iii) Ear tattooing (2 x 1 = 2mks)
(d) Castration (1 x 1 = 1mk)
(e) Open method / surgical method (1 x 1 = 1mk)

SECTION C(40MKS)

24. Measures used to control livestock diseases

1. Administering prophylactic drugs on routine bases to avoid infection e.g. use of coccidiostats
2. Vaccination e.g. to control anthrax
3. Quarantine to control notifiable diseases e.g. black quarter
4. Isolation of sick from health e.g. contagious diseases hence pneumonia
5. Drenching / deworming to control internal parasites that may cause anaemia
6. Use of antihelmintines e.g. nilson to control tape worms of round worms which may lead to death.
7. Proper treatment of sick animals by use of antibiotics to prevent spread of diseases e.g. mastitis
8. Control vectors e.g. ticks which transmit diseases like east coast fever
9. Proper housing to prevent exposing animals to pneumonia and foot rot
10. General hygiene in the farm by disinfecting utensils, tools and equipment and burying carcasses to prevent spread of diseases e.g. anthrax
11. Mass slaughtering / culling to prevent spread of incurable diseases e.g. Newcastle
12. Proper feeding/ nutrition to prevent nutritional diseases like milk fever
13. Proper breeding to prevent spread of breeding diseases like brucellosis
14. Hoof trimming to control foot rot
15. Docking to prevent blowfly infestation
16. Castration to prevent breeding diseases like vaginitis

10 x 2 = 20mks
1 mk for Measure / method
1 mk for correct disease

25. (a) Management of piglets

- Ensure piglets are breathing by removing mucous from nostrils
- Take piglets away from cannabalist mother after birth
- Tie cut to disinfect the umbilical cord
- Weigh each piglet and record
- Remove and dispose after birth
- Remove and dispose any dead piglet
- Put piglets in warm pen e.g. creep area
- Feed sow and weaner meal to piglets 2 – 3 days after birth
- Let piglets suckle colostrums
- Get rid of excess piglets/ provide foster mother
- Provide farrowing crate to prevent mother from crushing piglets
- Infect piglets with iron to prevent anaemia
- Carry out teeth clipping
- Treat sick if any immediately
- Vaccinate against common diseases
- Castrate male ones not intended for breeding
- Provide clean water
- Deworm piglets
- Clean them daily to remove dirt

(10 x 1 = 10mks)

(b) Siting farm structures

- Location of homestead should be near homestead for security

- Accessibility – easily reached for management practices
- In secure places to prevent theft
- In well drained area to prevent dampness
- Direction of prevailing wind – site structures which produce bad smell on lee ward side
- Site related structures close to one another e.g. calf pen and milking parlons
- Farmers sire structures where they prefer e.g. for pauramic view
- Gently sloping areas are preferred for easy drainage of water to prevent waterlogging
- Nearness to other social amenities e.g. electricity, telephone boosters e.t.c for easy access of these facilities
- Government policy / regulation e.g. accommodate construction of structures like road reserves
- Type of enterprises on the farm which need a structure e.g. granary when growing cereals
- Flexibility of the structures for modification to accommodate another enterprise without incurring much cost.

(10 x 1 = 10mks)

26. (a) General methods of maintaining farm tools, equipments implements and machines
- Clean after use to remove dirt
- Lubricate moving parts to reduce friction
- Oil metallic parts to prevent rust
- Paint wooden/ metallic parts to prevent rust
- Tighten loose nuts and bolts to avoid damage of implement
- Store properly to avoid theft
- Repair damaged / broken parts
- Replace worn out / damaged parts
- Check and adjust tyre pressure accordingly
- Check and add water in radiator if necessary
- Check and add oil if necessary
- Check and add fuel if necessary
- Read manufacturers instructions and follow them strictly on replacement of certain pasrts e.g. air cleaners
- Use it for the correct purpose

(10 x 1 = 10mks)

(b)Life cycle of two host tick
- Adult lay legs on the ground
- Eggs on the ground hatch into larvae
- Larvae climbs on the first host
- Larvae sucks blood on first host and becomes engorged
- Larvae moults into nymph when still on first host
- Nymph sucks blood on first host and get engorged
- Engorged nymph drops to ground and moult into adult
- Adults climbs on second host where they feed and mate
- Adult females drop to ground to lay eggs and cycle begins again

(7 x 1 = 7mks)

(c) Tick borne diseases
1. Red water
2. Heart water
3. East coast fever
4. Gall sickness
5. Rift valley fever

NAME ……..…….. DATE ……

INDEX NO. …….……..…..… CANDIDATE'S SIGNATURE ……..…..……..

443/1
AGRICULTURE
PAPER 1 (THEORY)

OCTOBER / NOVEMBER 2013
TIME: 2 HOURS

MBOONI EAST DISTRICT 2013

FORM 4 ENTRANCE EVALUATION TEST

Kenya Certificate of Secondary Education

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

23. Write your name and index number in the spaces provided above.
24. This paper consists of **THREE** sections: A , B and C
25. Answer **ALL** the questions in sections A and B and any **TWO** questions in section C
26. ALL answers **MUST** be written in the spaces provided.
27. Do not remove any pages from this booklet.
28. This paper consists of 10 printed pages.
    Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	**01-17**	**30 marks**	
B	**19-21**	**20 marks**	
C	**22 - 24**	**40 marks**	
		Total score	

SECTION A (30 MARKS)

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

1. Name three aspects of light that influence crop growth. (1½ marks)

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2. State four symptoms of Nitrogen deficiency in crops (2 Marks)

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3. Give one reason why finger millet is rarely attacked by pest in the store. (1 marks)

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4. State three aspects of climate that influence soil formation. (1½ marks)

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5. State four advantages of communal land tenure system. (2 Marks)

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6. State four factors influencing solifuction and mass wasting. (2 Marks)

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7. State three forms of soil water. (1½ marks)

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8. State four disadvantages of non-capped Multiple Stem System of prunning Coffee. (2 Marks)

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9. Identify three limitations of traditional storage structures. (1½ marks)

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10. Name the fungus that causes anthracnose in beans. (1 Marks)

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11. Name four factors affecting efficiency of pesticides. (2 Marks)

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12. State four precautions to be observed when harvesting pyrethrum. (2 Marks)

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13. Name four examples of insect pests with biting and chewing mouth parts. (2 Marks)

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14. Identify four types of layering as a method of vegetative propagation. (2 Marks)

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15. State four factors that determine spacing of a crop. (2 Marks)

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16. State four dis-advantages of vegetative materials used for propagation. (2 Marks)

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17. State four reasons for carrying out primary cultivation. (2 Marks)

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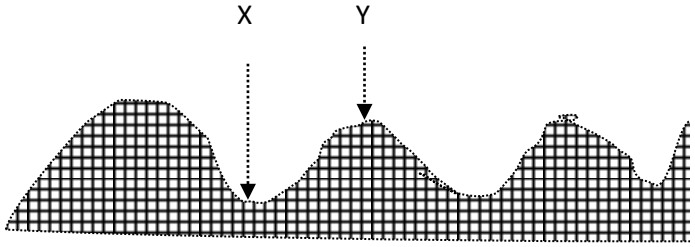
SECTION B. (20 MARKS)

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

18. The diagram below represents an operation carried out during Land preparation. Study it and answer the questions that follow.



a) Identify the practice. (1 Mark)

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b) Name parts X and Y (1 Mark)

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c) State reasons for carrying out the practice above. (3 Marks)

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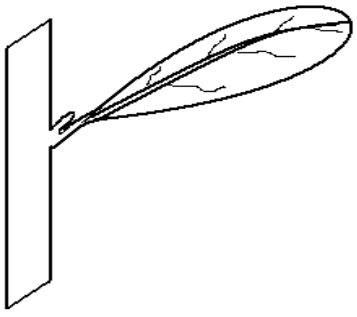
19. The figure below represents a portion of vegetative propagation material. Study it and answer the questions that follow.



a) Identify the planting material above. (1 Mark)

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b) State four reasons that determine the rooting of the material shown above. (2 Marks)

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c) Name two examples of crops that can be propagated using the method above. (2 Marks)

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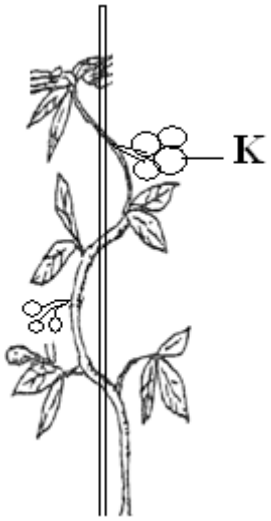
20. The figure below represents management practise in the field. Study it carefully and answer the questions that follow.



a) Identify the practice and name the crop to which the practice is done. (1 Mark)

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b) Give four reasons for the practice above. (2 Marks)

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c) Name the most serious pest of part K and state one control measure. (2 Marks)

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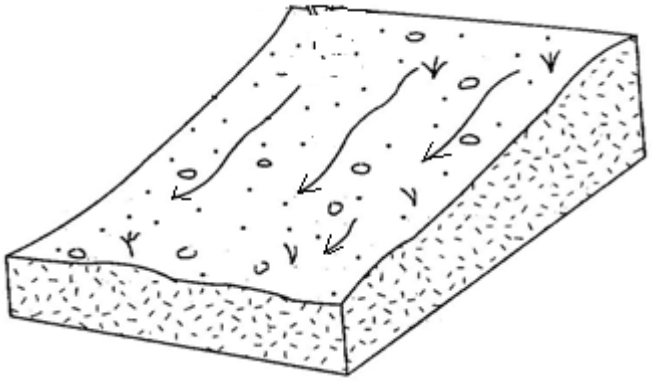
21. The diagram below represents a form of soil erosion. Study it and answer the questions that follow.



a) Identify the form of erosion (1 Mark)

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b) Explain briefly how the type of erosion shown above occurs. (2 Marks)

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c) Outline four stages involved in formation of a gully. (2 Marks)

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SECTION C (40 MARKS)

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

22. a) Herbicides work in a variety of ways to kill weeds. Explain five such ways. (5 Marks)
    b) Outline five disadvantages of tillage as a method of weed control. (5 Marks)
    c) Discuss ten harmful effects of crop pests. (10 Marks
23. Discuss the production of cabbages under the following sub-headings.
    a) Nusery bed establishment and management. (7 Marks)
    b) Transplanting. (5 Marks)
    c) Field management practises. (5 Marks)
    d) Harvesting and marketing. (3 Marks)
24. a) Explain five policies that the Government institute to regulate the amount of imported agricultural goals. (5 Marks)
    b) Explain how various biological agents' influence weathering process. (8 Marks)
    c) State and explain seven biotic factors that affect agricultural production. (7 Marks)

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NAME ……………………………………..………………..   DATE …………………………………

INDEX NO. …………….…………….…..….… CANDIDATE'S SIGNATURE   …………..….………..

443/2
AGRICULTURE

PAPER 2 (THEORY)
OCTOBER / NOVEMBER 2013
TIME: 2 HOURS

MBOONI EAST DISTRICT 2013

FORM 4 ENTRANCE EVALUATION TEST

Kenya Certificate of Secondary Education

443/2
AGRICULTURE
PAPER 2 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

29. Write your name and index number in the spaces provided above.
30. This paper consists of **THREE** sections: A , B and C
31. Answer **ALL** the questions in sections A and B and any **TWO** questions in section C
32. ALL answers **MUST** be written in the spaces provided.
33. Do not remove any pages from this booklet.
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FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	**01-16**	**30 marks**	
B	**17-20**	**20 marks**	
C	**21 -23**	**40 marks**	
		Total score	

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

1. Name four physical appearances observed in a sick animal. (2 Marks)

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2. Name any four structures necessary for handling dairy animals (2 Marks)

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3. Name the tools used for the following management practices in livestock

a) Deworming animals. (1 Mark)

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b) Ear notching. (1 Mark)

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4. Give four characteristics of roughage feed. (2 Marks)

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5. State four characteristics of dairy breeds. (2 Marks)

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6. Name two livestock diseases controlled through Artificial Insemination (2 Marks)

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7. What is cropping as applied in fish farming. (1 Mark)

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8. Give four reasons for treating water before use. (2 Marks)

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9. State three types of micro-catchment designed to conserve soil and water in growing crops. (1½ marks)

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10. List four safety precautions taken into consideration when working with farm tools. (2 Marks)

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11. State four ways of identifying farm animals. (2 Marks)

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12. Name four equipments used when harvesting honey from the Kenya top bar hive. (2 Marks)

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13. State four functions of vitamins in livestock. (2 Marks)

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14. State four ways of vaccinating animals. (2 Marks)

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15. State four differences between ruminants and non-ruminants. (2 Marks)

Ruminants	Non- ruminants

16. State three livestock managent practices carried out in the crush. (1½ marks)

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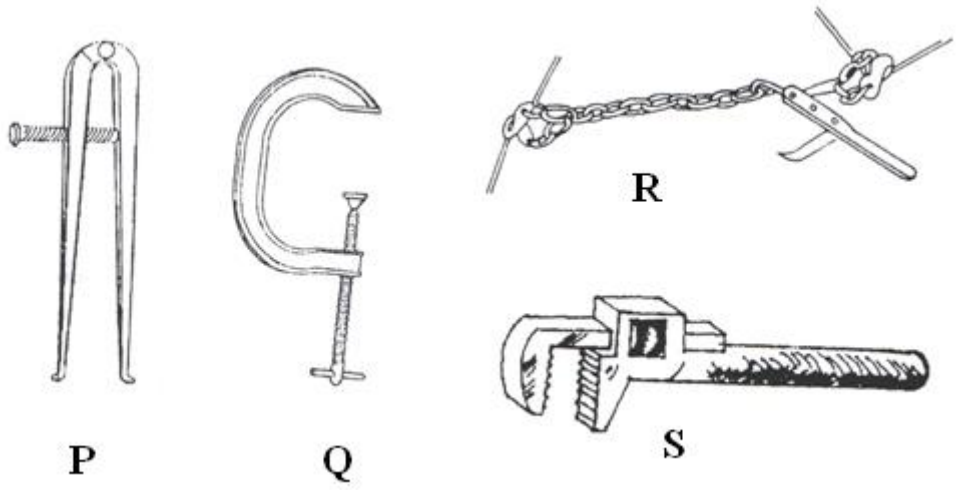
SECTION B (20 MARKS)

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

Section B (20 Marks)

17. Below are farm tools study them carefully and the questions that follow.



a) Identify the tools labelled P, Q, R and S. (2 Marks)

P ……..……..

Q ……..……..

R ……..……..

S ……..……..

b) Give one use of the tools labelled R and S. (2 Marks)

R ……..

S ……..

c) Give one maintenace practice carried out in tool labeled Q. (1 Mark)

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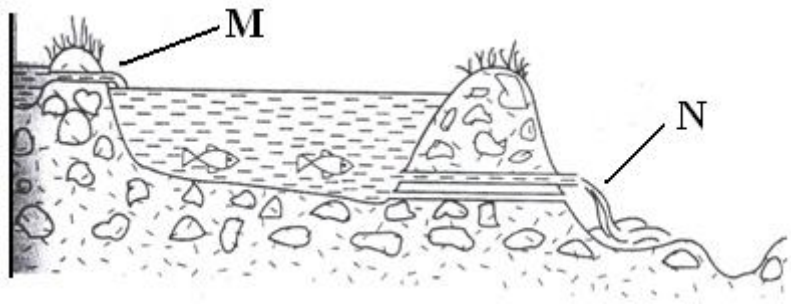
18. Below is a farm structure. Study it and answer the questions that follow.



a) Identify the structure. (1 Mark)

……..……..

b) Name the parts labelled M and N. (2 Marks)

M ……..……..……

N ……..…….

c) Give any two maintenance practices carried out in above structure. (2 Marks)

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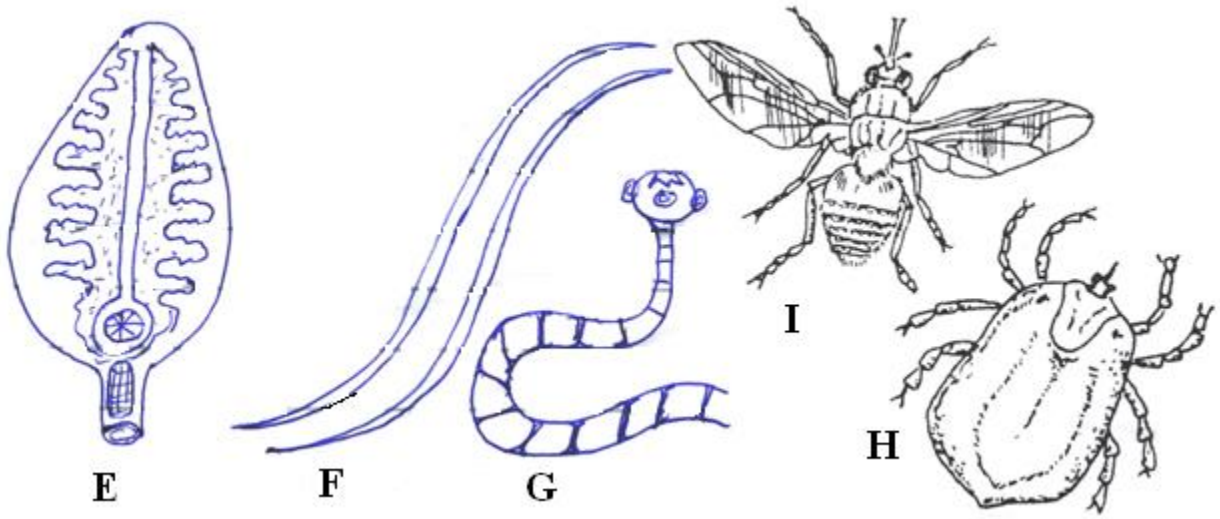
18. Below are livestock parasites. Study them carefully and answer questions that follow.



a) Identify parasites labelled E, F, G, H and I. (2 ½marks)

E …….

F …….

G ……..

H ……...

I ……

b) Give three harmful effects of parasite labelled I. (1½ marks)

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c) Give one livestock disease transmitted by the parasite labelled H. (1 Mark)

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20. A poultry farmer has maize containing 8%DCP and Soyabeans containing 43% DCP. If a farmer wants to make 100Kg of a feed. Using the person's square method, calculate the proportions in which the two ingredients would have to be mixed to make a feedstuff containing 15 % DCP (Show your working) (5 Marks)

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SECTION C (40 MARKS)

Answer ***only two*** questions from this section in the spaces provided

21. With an aid of a diagram, describe the process of egg forming in poultry. (20 Marks)
22. a) State five factors considered in selecting a construction material. (5 Marks)
    b) Explain six factors considered when siting a farm structure. (12 Marks)
    c) Give three importances of farm buildings. (3 Marks)
23. a) Describe the lifecycle of a three host tick. (8 Marks)
    b) Explain six general measures used to control livestock diseases on the farm. (12 Marks)

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MBOONI EAST DISTRICT FORM 4 ENTRANCE EVALUATION TEST 2013

443/1

AGRICULTURE PAPER 1

MARKING SCHEME

1. Aspect of light that influence crop production
- Light intensity
- Light duration
- Light wavelength ***3 x ½ = 1 ½***

2. Symptoms of nitrogen deficiency
- Chlorosis
- Leaves turn brown and fall prematurely
- Stunted growth
- Production of anthocyanin ***4 x ½ = 2***

3. Reason why millet is not attacked by storage pests
- Its due to its small size ***1x1=1***

4. Aspects of climate that influence soil formation
- Temperature
- Wind
- Rainfall
- Relative humidity
- Sun shine ***any 3 x ½ = 1 ½***

5. Advantages of commercial land tenure system
- No land fragmentation
- Problem of landlessness does not exist
- The system allows for free movement of livestock
- Land is left to rest for some time thus allowing pasture regeneration
- No land disputes ***4 x ½ = 2***

6. Factors influencing sulifluction and mass wasting
- Slope of land
- The nature of material
- Climate
- Vegetation cover
- Human activities
- Forces within earth crust ***4 x ½ = 2***

7. Forms of soil water
- Capillary
- Hydroscopic
- Superflows ***3 x ½ = 1 ½***

8. Disadvantages of non-capped multiple stem pruning
- Breaking of stems and branches
- Difficult to gather berries from top points
- Difficult to spray tall bushes
- Rotting of stumps with age ***4 x ½ = 2***

9. Limitations of traditional storage structures
- Limited in size
- Rotting of grains
- Rats and weevil attack ***3 x ½ = 1 ½***

10. Colletotrichum lindermuthianum ***1x1 = 1***

11. Factors affecting efficiency of pesticides
- Concentration
- Timing of application
- Weather condition at time of application
- Persistence ***4 x ½ = 2***

12. Precautions to be observed when harvesting pyrethrum
- Picked flowers should be put in an open basket
- Tins or polythene bag's should not be used
- Wet flowers should not be picked
- Flowers should not be compacted in the basket

4 x ½ = 2

13. Insect pests with biting and chewing mouth parts
- Locust
- Army worm
- Cut worm
- Ball worm ***4 x ½ = 2***

14. Methods of layering
- Marcotting/ aerial layering
- Tip layering
- Trench layering
- Compound / serpentive layering
- Stool layering ***4 x ½ = 2***

15. Factors determining spacing of a crop
- Type of machinery used
- Soil fertility
- Size of plant
- Moisture availability

- Use of the crop
- Pest and disease control
- Growth habit of the crop ***4 x ½ = 2***

16. Disadvantages of vegetative materials used for propagation
- Materials are bulky therefore difficult to store and transport
- Materials can not be stored for long
- Keeping materials free of disease is difficult
- Vegetative propagation does not result in to new crop varieties ***4 x ½ = 2***

17. Reasons for primary cultivation
- To remove weed's
- To bury organic matter for easy decomposition
- To facilitate water infiltration and aeration
- Destroy soil borne pest and diseases
- To make planting easy ***4 x ½ = 2***

18. a) Ridging ***1x1 =1***
    b) Part – X – furrow Y – Ridge ***2 x ½ = 1***
    c) Reasons for ridging
- Encourage tuber expansion
- Allow easy harvesting of root crops
- Enhance establishment of root crops
- Help to conserve soil and water ***3x1 = 3***

19. a) Stem cutting ***1x1 =1***
    b) Temperature
- relative humidity
- light intensity
- oxygen supply
- chemical treatment
- leaf area ***4 x ½ = 2***

c) Sugar cane
- cassava
- tea
- Napier grass ***2x1 = 2***

20. a)staking in tomatoes ***1x1 = 1***

b) Reasons for staking
- Production of clean fruits
- Facilitate spraying and harvesting
- Control incidence of disease outbreak
- Prevent infestation of soil borne pest ***4 x ½ = 2***

c) American ball worm
control : Spray appropriate insecticides ***1x1 = 1***

21. a) Sheet erosion ***1x1 = 1***

b) It's the uniform removal of soil in thin layer's from flat or gentle sloping land its caused by surface flow of water which detaches and transports the soil ***2x1 =2***

c) Formation of a gully
- Movement of water from the water shed
- Channel erosion caused by flowing water
- Wearing of the sides of the channel
- Scouring of the floor of the channel by moving water ***4 x ½ = 2***

22. –

a) Ways in which herbicides work
- Inhibiting of nitrogen metabolism – some herbicides may interfere with nitrogen metabolism thus affecting DNA synthesis
- Killing the cell – depends on the ability of the herbicide to penetrate the cell wall
- Causing abnormal tissue development – some herbicides cause abnormal growth of tissue such as twisting and gell formation
- Inhibiting photosynthesis – some herbicides interfere with chlorophyll formation
- Inhibiting respiration – some herbicides block movement of material from the site of manufacture to other areas ***5x1 =5***

b) Disadvantages of tillage
- Excess tillage pulverizes the soil destroying soil structure
- Tillage creates suitable condition for weed growth
- Its labourious and expensive incase of large scale
- Excessive cultivation may lead to the water loss, damage to crop roots and soil erosion
- Tillage may not effectively control weed's especially perennials ***5x1 = 5***

c) Harmful effects of crop pests
- Pests reduce the marketability of crop produce by lowering quality
- Pests lower the quality of leaf vegetables
- Stalk borer eat growing points causing retarded growth
- Some pests transmit diseases while others open up the plant for secondary infection
- Some pests destroy the embryo of seeds thus lowering germination potential
- Some pests attack fruits, flowers, berries thus lowering their quality and quantity.
- Pests such as squirrels un earth planted seeds resulting in to low plant population
- Pests such as nematodes, termites and moles damage crop roots
- Pests destroy crop leaves lowering photosynthetic area resulting into reduced yield
- Sucking pests deprive the plant its food by sucking plant saphence retarded growth ***10 x1 = 10***

23. Establishment of cabbage

a) Nursery establishment
- Identify site where brassica family crops have not been growth for the last three years
- Prepare to fine titch
- Remove foreign materials
- Level nursery bed
- Establish shallow drills about 10cm apart
- Place seeds and slightly cover
- Apply mulch followed by erecting a shade
- Water regularly
- Control disease e.g. dumping off
- Pricking out is done after germination
- Hardening off is done two weeks before transplanting ***7x1 =7 marks***

b) Seedlings are ready for transplanting a month after planting. Water the nursery bed.
- Select health and vigorous growing seeds
- Transplant early morning or late in the afternoon
- Lift seedling with a garden trowel
- Plant at the same depth and firm the base
- Water the seedling after transplanting ***5x1 = 5***

c) Field management
- Gapping – done to replace lost seedlings
- Watering – done once a day
- Weeding – done to reduce competition
- Top dressing – done using sulphate of ammonia (S/A) at the rate of teaspoonful
- Pest control – control cutworm and aphids using appropriate measures

- Disease control – control dumping off by use of copper fungicides ***5x1 =5***

d) Harvesting and marketing

- They are ready for marketing three to four months after planting
- Heads are cut when they are solid
- They are packed in bags or lorries
- They are sold mainly in urban centres
- Some are sold locally. ***3x1 = 3***

24. –

a) How the government regulate the amount of imported goods

- Heavy taxation of imports inorder to protect local industries
- Sub-sidising the growing of locally produced commodities
- Quality control – to ensure production of quality goods
- Conservation of natural resources
- Stepping up the control of diseases and parasites that affect crops and livestock ***5x1 =5***

b) Biological agents of weathering

- When large animals move they exert pressure on rocks causing disintegration
- Mans activities like mining, cultivation and construction reduce size of rocks in to small particles
- Bacteria and fungi initiate breakdown of plant tissue on the surface and within the soil
- Ants and termites bring to the surface large quantities of fine material
- Earthworm feed on plant tissue and their waste matter help to cement soil particles
- Roots of growing vegetation force their way into cracks on necks and exert pressure which splits the rocks.
- Acids formed after plants die and delay dissolve minerals from rocks and corrode the rocks hence weakening them
- Roots produce acids in the soil during respiration which dissolve minerals from rocks ***8x1 = 8***

c) Biotic factors

- Nitrogen fixing bacteria – convert nitrogen in to nitrates
- Pollinators – they transfer pollen grain from anthers to stigma thereby causing cross pollination
- Predators – they kill and feed on other animals. Those feeding on pests are beneficial
- Pathogens – These are micro organisms which transmit diseases
- Decomposers – they are micro organisms that act on plant and animal remains
- Parasites – They live in or on the body of an animal or plant
- Pests – They feed on the whole or part of the plant thereby lowering quality and quantity ***7x1 =7***

1. –
i) Aggression
ii) Abnormal sores
iii) Dull eyes
iv) Restlessness
v) Limping
vi) Abnormal posture
2. –
i) Crush
ii) Dip
iii) Spray race
iv) Dairy shed
v) Zero grazing unit
vi) Calf pen
3. –
a) Drenching gun/ bolus gun/ narrow necked bottle
b) Ear motcher
4. –
i) They are bulky
ii) Have high fibre content
iii) They are of plant origin
iv) Have low digestibility
v) Have low protein content
vi) Have high carbohydrate content
5. –
i) Wedged / angular in shape
ii) Straight topline
iii) Wide set apart hind quarters
iv) Well developed udders
v) Large well spaced teats
vi) Prominent milk veins
vii) Poorly fleshed ribs
viii) Large stomach capacity
6. –
i) Brucellosis/ contagious abortion/ orchitis
ii) Trichomoniasis
iii) Vaginitis
iv) Vibriosis
7. It is removal of marketable sized fish from the fish from the fish pond to achieve the correct stocking rate in the pond
8. –
i) To kill disease causing organisms
ii) To remove excess chemicals
iii) To soften water
iv) To remove sediments/ solid particles
v) To remove bad smell/ flavor/ taste
9. –
i) Negarim
ii) Contour bunds/ stone bunds
iii) Ridges
iv) Semi circular bunds
v) Trapezoidal bunds
10. –
i) Use the tool for its designed purpose to avoid possible accident
ii) Handle tools properly when working
iii) Use protective devices to avoid accidents
iv) Maintain and service tools regularly
v) Keep tools away/ safely when not in use
11. –
i) Branding
ii) Ear notching
iii) Ear tagging
iv) Tattooing
v) Use of neck strap/ chain
12. –
i) Protective wear/ clothing
ii) Honey container / bucket
iii) A hive tool
iv) Bee brush
v) A smoker
13. –
i) Promote growth
ii) Help in blood clotting
iii) Help on bone formation
iv) Help in muscular activity
v) Prevent diseases
vi) Acts as organic catalyst in various metabolic and physiological reactions
14. –
i) Injection
ii) Orally / through the mouth
iii) By inhalation / through the nose
iv) Through the eyes
v) Through the cloaca
15. –

Ruminants	Non ruminants
- Chew cud	- Do not chew cud
- Have four stomach chambers (polygastric	- Have one stomach chamber (monogastric)
- Regurgitate food	- Do not regurgitate food once swallowed
- Can digest cellulose (have micro organisms in the rumen that digest glucose	- Cannot digest cellulose except those with micro organism in caecum
- Have no ptylin in saliva / no erzymatic digestion in the mouth	- Have ptylin in saliva/ enzymaruc digestion in the mouth
- Most digestion and absorption takes place in the rumen	- Most digestion and absorption takes place in the small intestine
- Have alkaline saliva due to presence of ammonia	- The saliva is neutral in PH

16. –

i) Vaccination
ii) Spraying against external parasites
iii) Identification of animals
iv) Administering prophylactic drugs to livestock
v) Treating sick animals
vi) Dehorning
vii) Pregnancy test
viii) Artificial insemination
ix) Taking body temperature
x) Hoof trimming
xi) Milking

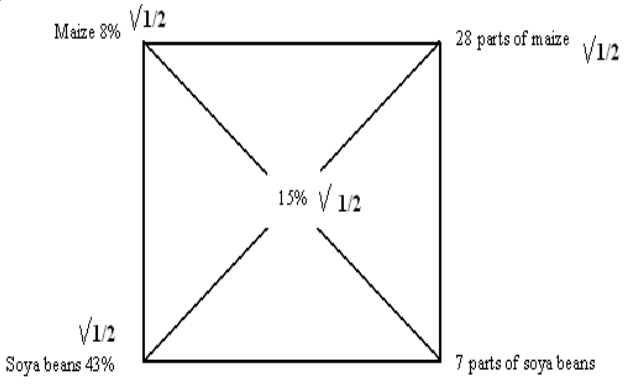
Section B

17. –
a) P – Inside caliper rej caliper alone
Q – G- Clap
R – Wire strainer Rej. Strainer
S – Pipe wrench
b) R – Tightening wires during fencing
S – Holding, tightening and loosening metallic pipes
c) -
i) Cleaning after use
ii) Replacing any broken part
iii) Greasing the moving part

18. –
a) Fish pond
b) M - inlet / inlet pipe
N - Outlet / drain pipe
c) -
i) Planting grass on the wall tops to prevent erosion
ii) Removing weeds growing around the pond
iii) Proper fencing around the pond to keep off fish predators
iv) Cleaning the pond to remove foreign particles and other organisms
v) Maintaining good level of water in the pond

19. –
a) E – Liver fluke
F- Round worm
G-Tape worm
H – Tiok
I – Tsetse fly
b) –
i) Transmit disease called trypanosomiasis to livestock (reject cause disease)
ii) Causes anemia to livestock by sucking large volumes of blood
iii) Damage skin and hide by their bites causing wounds which acts as path routes for secondary infections by pathogenic organisms
iv) Causes irritation by their bites to livestock
c) Red water / babesia
i) East coast fever
ii) Red water
iii) Nairobi sheep disease
iv) Tick bite fever
v) Anaplasmosis

20.

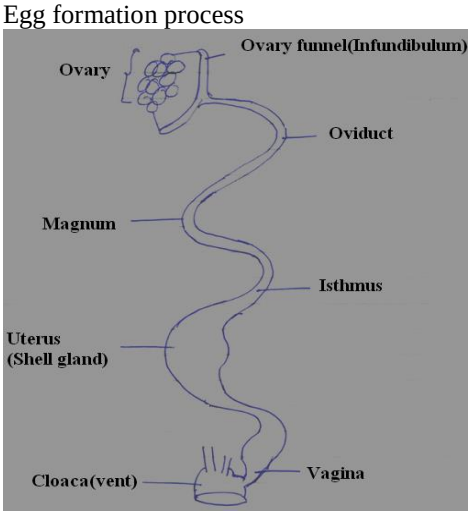


Quantity of maize required in kg
28 x 100 = 80kgs
35

Quantity of soya bean required in kgs
7x 100 = 20kgs
35

Total = 80kgs of maize + 20 kgs of soya beans = 100kgs

21. Egg formation process



Drawing – 2 mks
8 well labeled parts 8 x ½ = 4mks
Total = 6mks
Process of egg formation in poultry

i) Ovary – produces the female gametes (ova or egg)
ii) Funnel /infundibulum – funnel like structure and receives the egg from the ovary. Its 11.6cm long
Fertilization takes place here also addition of chalazae
iii) Magnum – Its long part of oviduct measuring 33cm
Albumen is added to the egg
Eggs takes about three hours in this region
iv) Isthmus – its aboyut 10cm long
Water, mineral salts, shell membranes are added in this region
Egg takes about 1 hour 15 minutes
v) Uterus (shell gland) – shell and shell pigments are deposited here
Addition of albumen is completed
Egg takes about 18 – 22 hours here
vi) Vagina – it temporary stores the egg before it is laid
It is about 6 – 9 cm long
Acts as a passage of egg
vii) Cloaca – it is elastic and helps in removing the egg out of the vent
It is oval and moist for easy passage of egg

Marks allocation: Diagram 6 mks
Explanation 2 x 7 = 14
Total = 20mks

22. –

a) Availability of the materials
Cost of the materials
Suitability of the materials to the prevailing weather conditions
Durability of the materials
Strength of the materials
Workability of the material

b) Location of the homestead – should be easy to view structures from the homestead
Accessibility – should be easy to reach the structures from all parts of the farm
Security – the area should be safe from predators, thieves and trespassers

Direction of prevailing wind – structures where foul smell is likely to come out should be constructed on the leeward side of the homestead/ structures should be free from drought and well ventilated
Drainage – The area should be free from damp conditions / water logging
Relation with other structures – structures with related uses should be constructed close to one another so as to save time and labour
Proximity to amenities – Structures should be constructed near water sources, electricity, telephone lines e.t.c.
Topography of the area – Should be gentle sloping to allow for free drainage of water from the site
Stating: 1mk i.e. 6 x 2 = 12mks
Proper explanation – 1 mk

c) Protects the farmer and livestock from predators
Help in control of livestock diseases and parasites
They provide shelter against extreme weather conditions
They provide storage of farm produce and other variable inputs
They increase efficiency of productions in the farm

23. –

a) Eggs are laid on the ground and hatch into larva
Larva climbs onto first host
Larva feeds on first host and engorges
Engorged larva drops to the ground and moult into nymph
Nymph climbs onto second host, suck blood and become engorged
Engorged nymph drops to the ground and moult into adult.
Adult climbs onto third host
Adult feeds and mate on the third host
The female drops to the ground and lay eggs
8 x 1 = 8mks

b) General farm hygiene / cleanliness of houses, equipments, proper carcass disposal to reduce spread of disease to others
Vaccination to create resistance to disease on regular basis
Control of vectors to avoid disease transmission
Use of prophylactic drugs to avoid infections
Proper feeding / balanced ration – to prevent nutritional disorders
Slaughtering/ killing infected animals to prevent spread of diseases to others
Proper breeding to control breeding diseases
Quarantine – restricting movement of animals and their products to control spread of diseases
Disinfecting animal dwelling to kill pathogens
6 x 2 = 12mks

NAME ……..…….. DATE ……

ADM. NO. ……..……..……..…..… CANDIDATE'S SIGNATURE ……..…..……..

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

MBOONI WEST FORM 4 ENTRANCE 2013/2014

Kenya Certificate of Secondary Education

443/1
AGRICULTURE
PAPER 1 (THEORY)
TIME: 2 HOURS

INSTRUCTIONS TO CANDIDATES

35. Write your name and Admission number in the spaces provided above.
36. This paper consists of **THREE** sections: A , B and C
37. Answer **ALL** the questions in sections A and B and any **TWO** questions in section C
38. ALL answers **MUST** be written in the spaces provided.
39. Do not remove any pages from this booklet.
40. This paper consists of 8 printed pages.
    Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	**01-16**	**30 marks**	
B	**17-21**	**20 marks**	
C	**22-24**	**40 marks**	
		Total score	

Top grade trial form 4 entrance 2013/2014
443/1
Agriculture
Paper 1

SECTION A – 30 MARKS
Answer ALL questions in this section in the spaces provided

1. Outline four economic importance of cotton strainer (Dysdercus SPP) (2 marks)
……
……

2. State two ways in which the problem of hard pans in the soil can be overcome. (1 mark)
……
……
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……

3. State four importance of agricultural economics. (2marks)
……
……
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……

4. Name four cultivation practices that destroy soil structure (2marks)
……
……
……
……

5. Differentiate between the terms.
(a) Soil texture and soil structure (1mark)
……
……
(b) Pricking out and pollarding (1mark)
……
……

6. State four limitations faced by large scale farmers wishing to use organic manure on the farm. (2 marks)
……
……

7. State three functions of soil mineral water. (1½ marks)
……
……

8. State four routine management practices carried out in the nursery. (2 marks)
……
……

9. State three characteristics of annual weeds. (1½ marks)
……

……

10. Mention four ways of modifying soil temperatures in crop production. (2marks)

……

……

11. Name any four uses of microcatchment in the farm. (2marks)

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12. Give four reasons why seedlings may fail to establish in the field. (2marks)

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13. (a) A farmer is to apply a compound fertilizer 20:30:10 on a vegetable plot measuring 5m wide by 8m long at a rate of 200kg per hectare. Calculate the amount of fertilizer the farmer requires for the plot. (2marks)

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(b) Calculate the amount of filler material that the fertilizer contains. (1mark)

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14. State the four types of pumps used in the farm. (2marks)

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15. State four conditions that make land clearing necessary. (2marks)

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16. State two effects of water pollution. (1mark)

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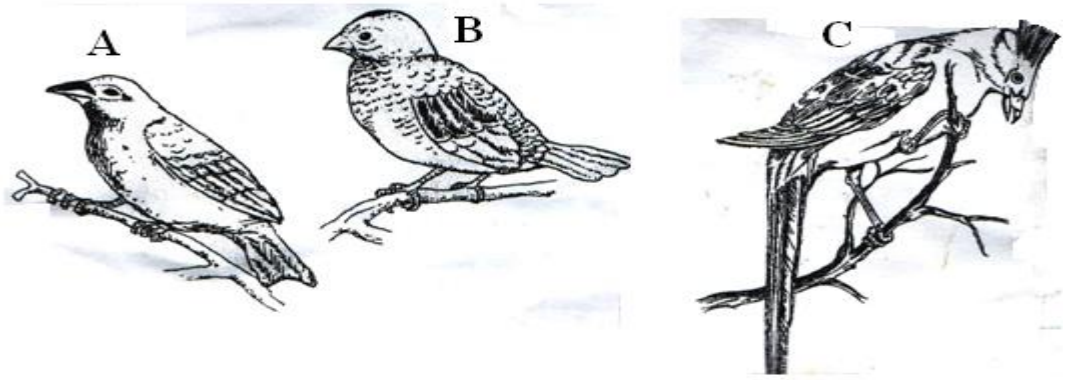
SECTION B – 20 MARKS

Answer ALL the questions in the spaces provided

17. The diagrams below show certain birds which are field crop pest.



(a) Identify the birds labelled A, B, and C. (1½ marks)

A -……..

B. - ……..

C. - ……..

(b) Name two crops attacked by pest A (1mark)

……

……

(c) Outline three methods which can be used to control the pests mentioned in (a) above (1½ mark)

……

……

18. Study the illustrations below and answer the following questions.

(a) Identify the weeds labelled E and F above. (1 mark)

E….……

F……

(b) State harmful effects of each of the weeds labelled E and F (2 marks)

E. ……

……

F……

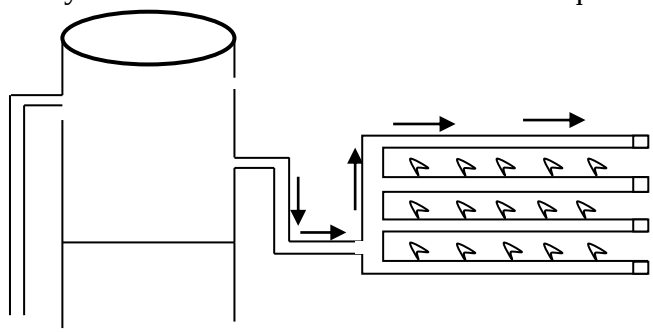
……

(c) State two effective methods of controlling the weed labelled E (2 marks)

……

……

19. Study the illustration below and answer the questions that follow:-



i.Identify the method of irrigation shown above (1mark)

……

……

ii.State the advantages of this method of irrigation (1 ½ marks)

……

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iii.State two problems associated with the method of irrigation mentioned in (a) above (1mark)

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iv.Outline how the method of irrigation in (a) above is mentioned. (2 marks)

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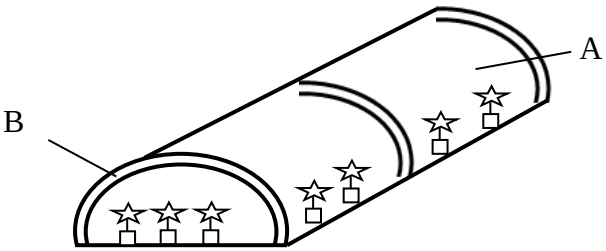
20. Use the illustration below to answer the questions that follow.



i. Identify the structure above (1 mark)

……

……

(ii) Label parts A and B on the diagram. (2marks)

……

……

(iii) State three advantages of using the structure identified above in crop production. (1½ marks)

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SECTION C – 40 MARKS

Answer any TWO questions in the spaces provided at the end of the section.

21. (a) Explain the importance of top dressing a pure grass pasture. (8marks)
    (b) Describe the production of kales under the following sub-headings
        (i) Seedbed preparation (3marks)
        (ii) Transplanting (5marks)
        (iii) Field practice (4marks)
22. (a) Explain the practices carried out to prepare seeds for planting. (8marks)
    (b) Give the contribution of settlement schemes to agricultural development. (5marks)
    (c) Explain briefly the harmful effects of diseases in crop production. (7marks)
23. (a) Describe the harvesting procedure of the following industrial crops.
        (i) Cotton (4marks)
        (ii) Coffee (4marks)
    (b) Describe the effects of cultural and religious beliefs on agricultural production. (6marks)
    (c) Explain the causes of land fragmentation in Kenya since independence. (6 marks)

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Name: …….. Index No. ……

Date: ……. Candidate's Sign. …….....

443/1

AGRICULTURE

Paper 1

OCT/NOV 2013

Time: 2 Hours

MUHORONI DISTRICT JOINT EVALUATION EXAM

Kenya Certificate of Secondary Education (K.C.S.E.)

FORM THREE

INSTRUCTIONS TO THE CANDIDATES:

(h) Write your **name, index number** and **school** in the spaces provided above.

(i) **Sign** and write the **date** of examination in the spaces provided.

(j) This paper consists of **Three** Sections: **A, B** and **C**.

(k) Answer **ALL** the questions in section **A** and **B** and any **TWO** questions from section **C**.

(l) Answers should be written in the spaces provided.

(m) This paper consists of **11**printed pages.

(n) Candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiners' Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-18	30	
B	19-24	20	
C	25-27	20	
		20	
		90	

This paper consists of 11 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION B (30MARKS)

Answer all the questions in the spaces provided

1. List **four** methods of draining a waterlogged land. (2 mks)

……..

……..

……..

……..

2. State **four** factors that determine the scale of production in agriculture. (2 mks)

……..

……..

……..

……..

3. Define the following terms:

(a) Pastoralism (1 mk)

……..

(b) Apiculture (1 mk)

……..

4. State **three** reasons for carrying out tertiary tillage practices in crop production. (1 ½ mks)

……..

……..

……..

……..

5. State **four** advantages of extensive farming. (2 mks)

……..

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6. Distinguish between oversowing and undersowing in crop production. (2 mks)

……..

……..

7. State **four** factors that a farmer should consider when selecting materials for vegetative propagation. (2 mks)

……..

……..

……..

……..

8. State **two** conditions that lead to salinisation. (1 mk)

……..

……..

9. Name the type of farm record; (2 mks)

(a) that show the total yield and yield per enterprise. ……

(b) that show all the farm assets. ……

(c) that show field activities. ……

(d) that show date of employment of workers. ……

10. State **three** reasons for earthing up in crop production. (1 ½ mks)

……..

……..

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……..

11. State **three** methods that facilitate rotational grazing. (1 ½ mks)

……..

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……..

12. State **two** ways of classifying pastures. (1 mk)

……..

……..

13. Give **one** reason for forking in carrot production. (½ mk)

……..

14. Give **four** pieces of information contained in a land title deed. (2 mks)

……..

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……..

15. State **four** management practices carried out on young trees immediately after transplanting. (2 mks)

……..

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……..

……..

16. State **two** ways in which transport and communication influence agricultural production. (2 mks)

……..

……..

17. State **four** characteristics of materials used in preparation of compost manure. (2 mks)

……..

……..

……..

……..

18. Give **two** deficiency symptoms of phosphorus. (1 mk)

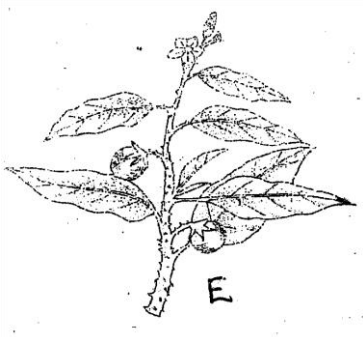
……..

……..

SECTION B (20 MARKS)

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

19. The diagrams below show some common arable weeds. Study them and answer the questions that follow.



(a) Identify the weeds: (1 mk)

D……

E……

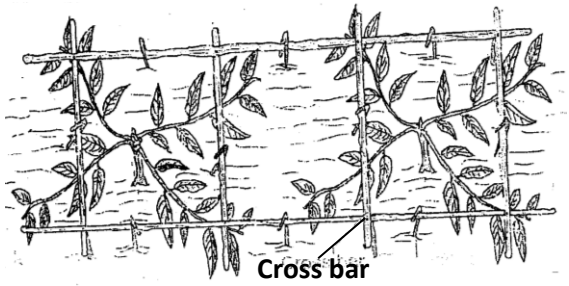
(b) Give **one** reason why it is difficult to control weed E. (1 mk)

……

(c) State **one** major harmful effect of weed D. (1 mk)

……

20. The diagram below shows one of the methods of bringing young tea into bearing. Study it and answer the questions below.



(a) Identify the method. (1 mk)

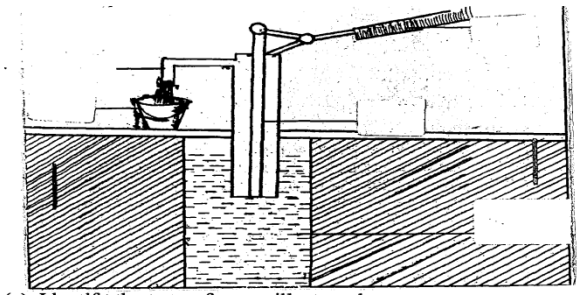
……

(b) State **two** advantages of using the method identified above. (2 mks)

……..

……..

21. The diagram below is an illustration of a way of pumping water in a farm. Study it and answer the questions that follow.



(a) Identify the type of pump illustrated. (1 mk)

……

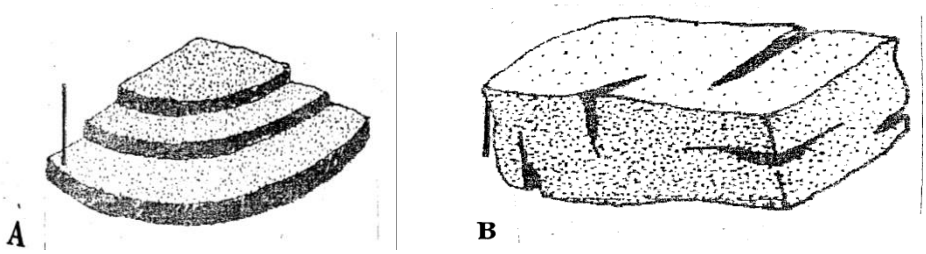
(b) Apart from the one named in 2 1(a) above, give **two** other pumps used in a farm. (2 mks)

……

……

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

The diagrams represent different types of a soil property.



(a) Identify the property of soil illustrated above in **A** and **B**. (2 mks)

A……..

B……

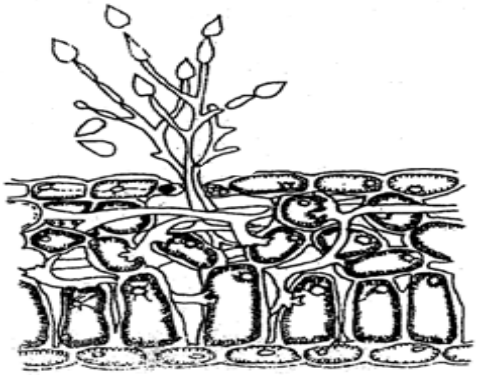
(b) State **two** ways by which the property influences crop production. (2 mks)

……..

……..

……..

23. Study the diagram shown below and use it to answer the questions that follow.



(a) Identify the fungal disease indicated above. (1 mk)

……

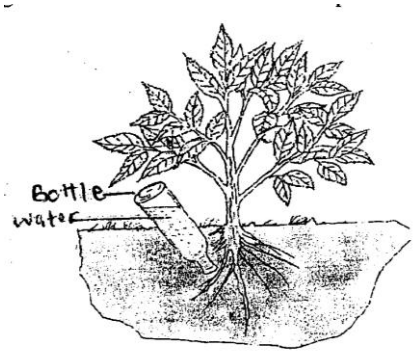
(b) State the causal organism of the disease identified above. (1 mk)

……..

(c) State **one** symptom of the disease above. (1 mk)

……

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



(a) Identify the irrigation system shown in the diagram. (1 mk)

……..

(b) State **three** advantages of using the above irrigation system. (3 mks)

……..

……..

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SECTION C (40 MARKS)

Answer any TWO questions from this section in the answer sheet provided.

25. (a) Explain why it is necessary to carryout drainage in a waterlogged soil before growing a crop. (4 mks)

(b) Explain **five** important qualities of a fertile soil. (10 mks)

(c) Explain **six** reasons for timely planting in crop production. (6 mks)

26. (a) Describe the production of bulb onions under the following sub-headings:

(i) Ecological requirements (4 mks)

(ii) Nursery establishment (4 mks)

(iii) Weed control (3 mks)

(iv) Harvesting (3 mks)

(b) Describe the procedure of harvesting cotton. (6 mks)

27. (a) Explain **six** cultural methods of controlling pests in a crop field. (12 mks)

(b) Describe the process of Gully Erosion. (4 mks)

(c) Describe **four** structural methods used in controlling soil erosion. (4 mks)

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Name :…… Adm.no …….....

School :……..……. Class…….……..

Candidate's sign……..… Date :……

443/2
AGRICULTURE
Paper 2
OCT/NOV 2013
Time: 2 Hours

MUHORONI DISTRICT JOINT EVALUATION EXAM

Kenya Certificate of Secondary Education (K.C.S.E.)

FORM THREE

INSTRUCTIONS TO THE CANDIDATES:

(o) Write your **name, index number** and **school** in the spaces provided above.

(p) **Sign** and write the **date** of examination in the spaces provided.

(q) This paper consists of **Three** Sections: **A, B** and **C**.

(r) Answer **ALL** the questions in section **A** and **B** and any **TWO** questions from section **C**.

(s) Answers should be written in the spaces provided.

(t) This paper consists of **11**printed pages.

(u) Candidates should check the questions paper to ascertain that all the pages are printed as indicated and that no questions are missing.

For Examiners' Use Only

SECTION	QUESTIONS	MAXIMUM SCORE	CANDIDATE'S SCORE
A	1-19	30	
B	20-23	20	
C	**24 -26**	20	
		20	
		90	

This paper consists of 8 printed pages. Candidates should check to ascertain that all pages are printed as indicated and that no questions are missing.

SECTION A (30 MARKS)

Answer ALL the questions in this section in the spaces provided

1. State **four** importance of keeping livestock healthy. (2 mks)

……..

……..

……..

……..

2. Give **one** use of each of the following hammers: (1 mk)

(a) Ball-pein Hammer

……..

(b) Sledge Hammer

……..

3. State **two** pre-disposing factors of foot rot. (1 mk)

……..

……..

4. State **four** functions of water in the body of animals. (2 mks)

……..

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……..

……..

5. State **three** various methods used in selection of livestock. (½ mks)

……..

……..

……..

6. Outline **three** disadvantages of artificial insemination in cattle management (1 ½ mks)

……..

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……..

7. Name **four** breeds of dairy goats. (2 mks)

……..

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……..

8. Give **four** advantages of using spray race in controlling ticks from livestock. (2 mks)

……..

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9. State **four** reasons for proper maintenance of farm tools and equipment. (2 mks)

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10 Give **four** reasons why farmers handle livestock . (2mks)

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11. State **three** importance of flushing in sheep. (½ mks)

……..

……..

……..

12. Name **three** common pests that attack bees in a hive. (1½ mks)

……..

……..

……..

13. Give **three** methods of applying a caricides. (1 ½ mks)

……..

……..

……..

14. Name **two** species of camels that can be kept. (1 mk)

……..

……..

15. Give **four** maintenance practices of a fish pond. (2 mks)

……..

……..

……..

……..

16. Give **two** main functions of crop in the digestive systems of poultry. (1 mk)

……..

……..

17. Give **one** reason why a dropper is used in fencing (½ mk)

……..

18. State **five** ideal features of a rabbit hutch. (2 ½ mks)

……..

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19. State **five** advantages of Kenya Top Bar hive over log hive. (2 ½ mks)

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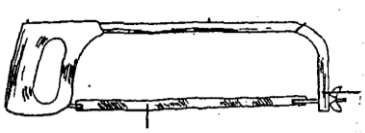
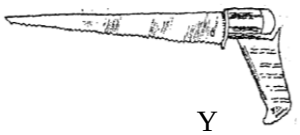
SECTION B (20MARKS)

Answer all the questions in the spaces provided

20. Observe the tools X and Y illustrated below and answer the questions that follow



X



Y

(a) Identify the tools. (2 mks)

X……

Y……

(b) State ONE use of each of the following tools. (2 mks)

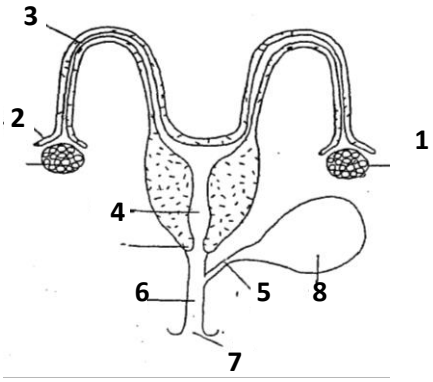
X…….

Y……..

(c) State **one** maintenance practice carried out on X. (1 mk)

……

21. The diagram below represents the reproductive system of a cow.



(a) Identify the parts labeled 1-4 (2mks)

1……. 2:…….

3……. 4:……..

(b) Name **two** hormones produced by the part labelled (1). (2 mks)

……

……

(c) Give function of the part labelled (7). (1 mk)

……

22. The diagram below illustrates a livestock parasite.

(a) Identify the parasite illustrated above. (1 mk)

……

(b) Name **one** animal commonly attacked by the parasite. (1 mk)

……

(c) Give **one** major sign that shows the animal is attacked by the above parasite. (1 mk)

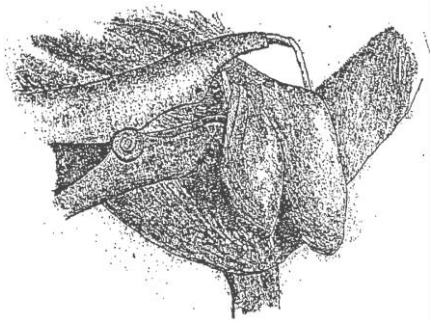
……

(d) Give **two** control measures of the parasite. (2 mks)

……

……

23. The illustration below shows a certain livestock management practice. Study it and answer the questions below.



(a) Identify the practice. (1 mk)

……..

(b) Give **three** reasons for the above livestock management practice. (3 mks)

……..

……..

……..

(c) State **one** advantage of this type of practice as compared to other methods. (1 mk)

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SECTION C (30 MARKS)

Answer any TWO Questions from this section in the answer sheet provided.

24. (a) State the factors a farmer should consider when selecting materials for constructing farm structures. (5 mks)

(b) Describe the use of various hand tools required for the construction of a permanent dairy shed. (10 mks)

(c) Describe the preparation that should be carried out for a sow one week before farrowing. (5 mks)

25. (a) Describe Rinderpest disease under the following sub-headings:

(i) Signs of infection. (6 mks)

(ii) Control measures. (4 mks)

(b) Explain **six** ways in which ticks can be controlled in livestock farming. (6 mks)

(c) State **four** signs of heat in a sow (4 mks)

26. (a) Explain **five** factors determine the amount of water required by an animal. (10 mks)

(b) Describe the procedure of harvesting honey. (6 mks)

(c) State any **four** functions of worker bees. (4 mks)

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