**KIRINYAGA SCHOOL BASED EXAMINATION FROM FOUR JULY**

 **443/1**

 **AGRICULTURE -PAPER ONE**

 **FORM IV**

 **JULY/AUG 2019**

 **TIME: 2 HOURS**

**1**. List **four**  characteristics of large scale farming sytems (2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

2. State **four** activities that may be undertaken in organic farming (2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

3. List **four**  physical agents of weathering (2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

4. Give **three** reasons for controlling weeds in pastures (11/2mk)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

5. Define the following terms as used in agricultural economics (2mks)

 (i) Scarcity ..........................................................................................................................................

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 (ii) Opportunity Cost ............................................................................................................................

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6. Outline **three** indicators of well composed manure (11/2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

7. Give **four** reasons for using certified seeds for planting ( 2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

8. State **four** advantages of land consolidation ( 2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

9. State **four** effects of HIV/AIDS on agricultural production (2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii).......................................................................................................................................................

 (iv)........................................................................................................................................................

10. Name **one** vegetative material used to propagate each of the following crops (2mks)

 (a) Bananas .............................................................................................................................................

 (b) Pineapples...........................................................................................................................................

 (c) Irish Potatoes......................................................................................................................................

 (d) Pyrethreum..........................................................................................................................................

11. Differentiate between the following terms (1mk) (a) Intercropping and mixed cropping ............................................................................................

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 (b) Fixed input and variable input ............................................................................................. (1mk)

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12. Outline **four** ways of improving labour efficiency in the farm (2mks) (i) .............................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii) .......................................................................................................................................................

 (iv) .......................................................................................................................................................

13. State **four** factors that influence the type of irrigation to be used in the farm (2mks) (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii) .......................................................................................................................................................

 (iv) .......................................................................................................................................................

14. State**four**  ways in which burning a vegetation may lead to loss of fertility (2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii) .......................................................................................................................................................

 (iv) .......................................................................................................................................................

15. Name **three** pests that commonly affect beans (11/2mks)

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 .............................................................................................................................................................

16. State **three** factors that determine the quality of hay (11/2mks)

 (i) ........................................................................................................................................................

 (ii) .......................................................................................................................................................

 (iii) .......................................................................................................................................................

 (iv) .....................................................................................................................................................

  **SECTION B ( 20 MKS)**

  **Answer all questions in this Section**

17. The diagram below illustrates a method of collecting soil sample from a field . Study it and answer the question that follows



(i) Identify the method illustrated above (1mk)

 .........................................................................................................................................................

(b) Name **three** areas on the farm that should be avoided during soil sampling ? (3mks)

 ..................................................................................................................................................................

(c) Name **two** pieces of information that a composite soil sample should have before being taken to the

 laboratory for testing . ( 2mks)

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18. The diagrams below illustrates a method of drainage used in crop production



 (a) Identify the the method of drainage (1mk)

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(b) Name **two** other methods of draining a water logged soil (2mks)

 (ii) ......................................................................................................................................................

 (ii) ......................................................................................................................................................

(c) State **two** reasons why drainage is important as a land reclamation methods (2mks)

 (ii) ......................................................................................................................................................

 (ii) ......................................................................................................................................................

19. The diagrams below illustrate some common weeds



(a) Identify the weeds labelled P, Q and R (3 mks)

 P : ......................................................................................................................................................

 Q: ......................................................................................................................................................

 R: ......................................................................................................................................................

(b) Give a reason why it is difficult to control weeds labelled R (1mk)

 ..........................................................................................................................................................

20 The diagrams below illustrates types of soil erosion . Study them and answer the questions that

 follows



 (a) Identify the types of erosion labelled R, S, and T

 R.................................................................................................................................................(1mk)

 S................................................................................................................................................(1mk)

 T.................................................................................................................................................(1mk)

 (b) Describe the **four** stages involved the formation of the type of erosion T (2mks)

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 **SECTION C ( 40 MARKS)**

 **(Answer ANY two questions from this section in the spaces provided after question 23)**

21. (a) Explain the cultural practices carried out in the field to control crop diseases (8mks)

 (b) Describe **four** ways employed by a farmer in breaking seed dormancy (4mks)

 (c) Explain the importance of farm accounts to a farmer (8mks)

22. (a) Describe the production of cabbages seedlings under the following sub-headings

 (i) Nursery establishment (8mks)

 (ii) Management of seedlings up to transplanting (5mks)

 (b) Explain the problems that face farmers in the marketing of agricultural produce (7mks)

23. (a) Explain **five** instances when it is advisable to use herbcides in weed control (5mks)

 (b) Describe **seven** ways in which biotic factors influence crop production (7mks)

 (c) Explain why minimum tillage is a recommended practice in crop production (8mks)

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**KIRINYANGA SCHOOL BASED EXAMINATION FROM FOUR JULY - AUGUST 2019**

**AGRICULTURE MARKING SCHEME 443/1**

1. - Large tracts of Land

 - Heavy capital Investments

 - Involves use of skilled labour

 - High levels of management

 - It for commercial purposes

 - Most of work is merchanised

 - Provides more employement

  ***(Any 4 x 1/2 = (2mks)***

2. - Mulching

 - Application of organic manure

 - Crop rotation

 - Use of medicinal plant products to control diseases

 and parasites

 - Biological methods of controlling pest

 -Cover cropping

 -Double digging

 -Observing a close season

 ***(Any 4 x 1/2 = (2mks)***

3. - Temperature

 - Moving ice

 - Wind

 - Water ***(Any 4 x 1/2 = (2mks)***

4. - To avoid poisoning livestock

 - To minimise competition for nutrients, space and

 Light

 - To ensure the forage is of high palatability

 -To increase the life span at the pastures

 -To increase the quality and quantity of the pasture   ***(Any 3 x 1/2 = (1 1/2 mks)***

5. (i) -Scarcity - its the situation where the resources of production are Limited in supply ***(1 mk)***

 (ii) Opportunity cost - Money value/Returns of the foregone alternative  ***(1 mk)***

6. - Absence of bad odour

 - Materials are light in weight

 - Manure in brown in colour

  ***3 x 1/2 = (11/2 mks)***

7. - Free from foreign materials e.g. weeds

 - Gives rise to vigourosly growing plants

 - Have high germination percentage

 - Free from pest and disease attack/healthy

 - True to type/ not contaminated

  ***(Any 4 x 1/2 = (2mks)***

8. - There is proper supervision of the farm

 - Reduces costs on travelling

 - Easy to get extension services

 - Allow good farm planning

 - It enhances proper pest, diseases and weed control

- It encourage long term investments

 ***(Any 4 x 1/2 = (2mks)***

 9.- Shortage of farm labour

 - Low supply of farm produce

 - Lack of motivation to invest in Agriculture

 - Less time spent on farming activities as people cares for sick

 - Alot of money is spent on treatment instead of

 developing agriculture ***(Any 4 x 1/2 = (2mks)***

10. (a) Suckers  ***(1/2 mk)***

(b) Slips/suckers/crown ***(1/2 mk)***

 (c) Stem tubes  ***(1/2 mk)***

 (d) Splits ***(1/2 mk)***

11.***Intercropping*** - This is growing of two or more crops in the same field at the same time.

  ***Mixed cropping*** - This is the growing of two or more crops in the same field but in specific sections at the same time.

 ***( 1 mks= mark as a whole)***

(b) ***Variable inputs*** - are inputs that vary with the level of production

 ***Fixed inputs*** -are inputs that do not vary with the level of procuction ***(1 mark as a whole )***

12. - Training

 - Farm mechanization

 - Giving incentives and improving terms and

 conditions labour supervision

 - Assigning specific tasks to workers according to their skills, ability and interest

 ***(Any 4 x 1/2 = (2mks)***

13 - Capital availability

 - Topography of the land

 - Water availability

 - Type of soil

 - Type of crop to be irrigated  ***(Any 4 x 1/2 = (2mks)***

14.- Destroy organic matter

 - Destroy soil structure

 - Kill useful soil micro-organism

 - Exposes soils to agent of erosion

 - Causes nutrient imbalances /loss of volatile nutrients

 - Destroy soil water ***(Any 4 x 1/2 = (2mks)***

15. - Bean aphid

 - Bean Bruchid

 -American boll worn

 - Bean fly

 - Golden moth

 - Spotted borer ***(Any 3 x 1/2 = (11/2mks)***

16. - Forage species

 - Stage of harvesting

 - Length of the drying period

 - Weather condition

 - Condition of the storage structure

 ***(Any 3 x 1/2 = (11/2mks)***

**SECTION B *(20 mks)***

17 . (a) Traverse/ diagonal method ***(1mk)***

(b) - Ant hills

 - Dead farrows

 - Terrace stands

 - Old fence lines

 - Swampy areas

 - Near trees and boundaries

 - Between slopes

 - Bottom land ***(Any 3x1 = (3mks)***

(c) - Name and address of the farmer

 - Field Number

 - Date of sampling

 - Required tests

 ***(Any 2 x 1 = 2mks)***

18. (a) Use of cambered bed ***(1mk)***

 (b) Use of open ditches

 - Use of underground pipes

 - Use of French drains

 - Pumping

 - Planting of trees

 ***(Any 2 x 1 = 2mks)***

 (c) - It increases soil volume

 - It increase soil aeration

 - It raises soil temperature

 - It increases microbial activities in the soil

 - It reduces soil erosion

 - It removes toxic substances from the soil

 ***(Any 2 x 1 = 2mks)***

 19 (a) P - Black jack/ *Bidens Pilosa* ***(1mk)***

 Q- Sodom apple - *solanum incanum* ***(1mk)***

 R- Oxalis / Sorrel/Oxalis lariforia  ***(1mk)***

 (b) It has underground bulbs that propagate vegetabrens and are also resistant to drought ***(1mk)***

20 (a) R- Rill erosion ***(1mk)***

 S- Shett erosion ***(1mk)***

 T- Gulley erosion ***(1mk)***

(b) (i) - Water moves from watershed areas  ***(1/2mk)***

(ii) Channel erosion is caused by flowing water  ***(1/2mk)***

(iii) The sides of the channel wears out  ***(1/2mk)***

(iv) Scouring of the floor of the channel by moving water ***(1/2 mk)***

**SECTION C**

21. (a) Using healthy planting materials

-Practising field hygiene / eg burning diseased crop residues / Regueing /use of clean implements/clean weeding to destroy disease carrying pest micro -habitat

- Proper seedbed preparation to expose soil borne pathogens to predators and the sun .

- Proper spacing to control damping off in cabbage seedlings in the nursery and rosotte disease in groundnuts

- Heat treatment to control diseases like ratoon stunting in sugarcane

- Proper drying of cereals and pulses to reduce moisture content before storage

- Use of disease resistant varieties such as Ruiru II in coffee to control CBD

- Crop rotation to break the life cycle of disease causing organisms

- Proper pruning to eliminate humid micro climate which encourage multiplication of disease causing organisms

- Using healthy planting materials to prevent introduction of pathogens in the field

- Timely planting to escape attack of diseases in the field

 ***(Any 8 x 1 = (8mks)***

 (b)- ***Methods of breaking seed dormancy***

- Mechanical methods e.g scarfication to make the seed coat permeable to water

- Heat treatment / Hot water treatment / light burning to soften seed coat making it permeable to water thus enabling germination

- Chemical treatment to wear off the seed coat making it permaeble to water

- Soaking in water for a period of 24-48 hours to make the seed swell thus geminating faster ***4x1 = (4 mks)***

(c) ***Importance of farm account***

- It enables comparison of performance between different financial years

- Helps to determine whether the farmer is able to meet its financial commitment i.e whether solvent or insolvent

- Provide the history of the farm

- Helps to determine profitability of different enterprises

- Provides a basis for taxation

- Facilitates proper business planning

- Acts as a basis to secure loan/farm credit

- Helps the farmer to make sound management decision

- Helps in preparation of farm budget

- Helps the farmer to remember his creditors and debtors

 ***(Any 8x1 = (8 mks)***

 22(a). Nursery establishment

 - Choose a suitable nursery site

 - Clear the bush

 - Measure out the dimensions 1m - 1.5m wide and convinent length

 - Plough/ dig deeply to remove perennial weeds

 - Harrow to a fine tilth

 - Raise the bed if wet or sunken when dry

 - Level the bed

 - Make shallow furrows

 - Apply appropriate amount of phosphatic fertilizer on the drill

 - Mix phospharic fertilizer with soil

 - Drop the seeds singly into the furrow and cover lightly with soil

 - Water the nursery

 - Apply light mulch

  ***(Any 8x1 = 8mks)***

(b)***. Management of seedlings***

 - Erect shade after removal of mulch

 - Water during the dry season

 - Carry out weeding through uprooting /to reduce competition for nutrients

 - Control pest by spraying appropriate insectcide

 - Control disease such damping off

 - Harden the seedlings two weeks before transplanting

  ***(Any 5x1 = 5mks)***

(c). Bulkiness - Giving problems of handling , tranportation and storage

-Perishability - Extra costs are incurred in preservation

-Transportation - Products get spoilt before reaching the market in areas with poor road network

- Lack of market informaton which encourage exploitation of farmers by middlemen

- Seasonality - Which may result to oversupply in the market leading to low prices

- Price fluctuation - Making farmers unable to break even commodity prices are low

- Storage - Construction of storage facilities make extra costs to be incurred

- Change in demand - Consumer tastes may change during production period resulting in a fall in demand

- Delayed payments

- Heavy taxation leading to high commodity prices thus lowering demand

- Competition due cheap imported goods

 ***( Any 7x1 = 7mks)***

23(a) - When crops are closely spaced

 - When weed control is needed to be done very fast

 - When labour is expensive

 - To control irritating weeds

 - When soil is very wet

 - When minimum tillage is carried out

 ***( Any 5 x1 = 5mks)***

 1.- Pathogens cause crop diseases thus reducing quality and quantity of agricultural products

 2. Predators - Kills and feed on other animals / others help in biologocial pest control

 3.Nitrogen fixing bacteria - Converts atmospheric nitrogen into nitrate thus improving soil fertility

 4.Decomposers acts on plant and animal tissues causing rotting which improves soil fertility

 5. Pollinations - helps in crop pollination

6. Parasites - Damage internal organs

 - Cause imitation to animals

 - Block arimentary canal

 - Bite and destroy hides & skin

 - Some are disease vectors

 - Some suck blood causing anaemia

 - Deprive animals off its food

7. Pest - Transmit crop diseases

 - Increase cost of production during control

 -Reduce crop yields

 - Makes holes on crops reducing photosynthetic area

 - Expose crops to secondary infections  ***(Any 7x1 = 7mks)***

23 (c)

 - It maintains soils structure

 - Helps to conserve soil moisture

 - Saves on time in land preparations

 - Its less labour demanding

 - Reduces root/ tuber disturbance

 - Ensures retention of useful organisms in the soil

 - Cheap and less demanding on fuel consumption

 -Results in low total cost of production

 - Soil nutrients are not exposed to valatilization

 this maintains soil fertility.  ***(Any 8 x1 = 8mks)***

  **NAME..................................................................... INDEX NO..................................................**

 **DATE............................................................**

 **SIGNATURE................................................**

  **KIRINYANGA SCHOOL BASED EXAMINATION FROM FOUR JULY - AUGUST 2019**

 **443/2**

 **AGRICULTURE PAPER TWO**

 **FORM IV**

 **JULY/AUG 2019**

 **TIME: 2 HOURS**

  **INSTRUCTIONS TO ALL CANDIDATES:**

**1. Write your name and Admission number in the spaces provided above**

**2. This paper consists of Three Sections A. B and C**

**3. Answer ALL the questions in section A and B and any TWO in section C**

**1**. Outline **two** types of vitamins in livestock nutrition (2mks)

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2. Mention **four** livestock routine management practices that can be carried out in a crush (1mk)

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3. State  **two** attachment methods of the tractor implements (1mk)

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4. List **four** reasons for keeping livestock (2mks)

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5. State **four**  ideal features of a good calf pen (2mks)

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6 Give **four** reasons for swarming of bees (2mks)

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7. State **four** conditions necessary for artificial incubation (2mks)

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8. Mention **two** hormones that are involved in milk let down in dairy cattle (1mk)

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9. A goat was successifully served on 19th October 2018, state the expected date of kidding (1mk)

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10. State **four** characterisitcs of an effective acaricide (2mks)

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11. Name the complimentary tool to lead stick (1/2mk)

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12. Mention **four** factors that predispose a dairy cow to mastitis (2mks)

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13. Mention **four** reasons that may necessitate handling of livestock (2mks)

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14. State **three** maintenance practices of a grain silo (11/2mk)

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 ........................................................................................................................................................

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15. Give Physical differences between the following breeds of livestock

 (a) Large white and landrace .................................................................................................... (1mk)

 ........................................................................................................................................................

 (b) Newzealand white and california white ................................................................................. (1mk)

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 c) Dromedary and Bactrian Camel breeds ................................................................................. (1mk)

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16. Give **three** routes through which pathogens enter the body of an animal (11/2mk)

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17. Outline the function of each of the following parts of a tractor engine a) Piston .............................................. ................................................................................. (1mk)

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b) Crank shaft .............................................. ................................................................................. (1mk)

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c) Spark plug .............................................. ................................................................................. (1mk)

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18. Name the infective stage of liverflukes in livestock (1/2mk)

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***SECTION B ( 20 MARKS )***

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

19. The illustration below represents a practice carried out in cattle production



(a) Identify the practice (1mk)

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 .......................................................................................................................................................

(b) State the reason for carrying out the pratice shown above (1mk)

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 .......................................................................................................................................................

(c) When should the practice be carried out on an animal (1mk)

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(d) State **two** features of the milk man that ensure clean milk production (2mks)

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20. The diagrams below represents some farm tools and equipment. Study them carefully then answer

 the questions that follow.



 (a) Identify tools labelled A and D ( 2mks)

 A...........................................................................................................................................................

 D...........................................................................................................................................................

 (b) State the functional difference between too B and C ( 2mks)

 ....................................................................................................................................................

 (c) Give the use of tool A (1mk)

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21 The illustration below represents a digestive system of a farm animal . Study it carefully and answer

 the questions that follow

(a) State **two** activities that take place at part labelled Q (2mks)

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 ..................................................................................................................................................................

(b) Give the structural modification of part R that enable it to perform its function (1mk)

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(c). Mention **one** farm animal with the above type of digestive system (1mk)

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(d) Name the part of the poultry digestive system where digestion of cellulose take place (1mk)

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



(a) Identify the above system of polutry rearing (1mk)

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(b) State **two** advantages of the rearing system represented above (2mks)

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 .............................................................................................................................................................

(c) Other than the system shown above name **two** other poultry rearing systems (2mks)

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 **SECTION C ( 4OMKS )**

 (Answer any **two** questions in this section in the spaces provided after question 25)

23. (a) Describe the general methods of controlling livestock diseases (10mks)

 (b) Describe the preparation that should be carried out for a sow one week before she farrows

 (6mks)

 (c) Outline **four** factors considered when selecting construction materials (4mks)

24. (a) Compare an ox-drawn mould board plough with a tractor drawn mouldboard plough (8mks)

 (b) Describe the life cycle of a three host tick (8mks)

 (c) Give **four** factors that determine the amount of water taken by a dairy cow (4mks )

25.(a) Describe coccidiosis disease under the following subheading

 (i) Causal organism (1mk)

 (ii) Animals affected ` (2mks) (iii) Symptoms of attact (4mks)

 (iv) Control measures (3mks)

(b) Describe the characterisitcs of exotic cattle breeds (6mks)

(c) Outline the disadvantages of natural mating (4mks)

**KIRINYAGA SCHOOL BASED EXAMINATION FORM FOUR JULY - AUGUST 2019**

**AGRICULTURE 443/2 MARKING SCHEME**

1. Fat soluble vitamins

 Water soluble vitamins  ***2 x 1/2 = (1mks***)

2. Spraying livestock against external parasites

 - Identification

 - Vaccination

 - Administering prophylactic drugs to animals

 - Treating sick animals

 - Dehorning

 - Pregnancy test

 - Artificial insermination

 - Taking body temperature

 - Hoof treaming

 - Milking ***(Any 4 x 1/2 = (2mks***)

3. -One point hitch

 - Three print hitch

 - P.T.O shaft ( power take off shaft )

 ***(Any 2 x 1/2 = (1mks***)

4. -Source of income

 -Source of food

 - Cultural uses

 - Provide animal power

 - Provide raw materials to industries

 ***(Any 4 x 1/2 = (2mks***)

5. - Draught free

 - The roof should be leak proof

 - Concrete floor for easy cleaning

 - Should be well ventillated

 - Should be well lit

 - Should be properly drained

 - Single housing to prevent spread of parasite and diseases

 - Should be spaceous

  ***(Any 4 x 1/2 = (2mks***)

6. - Shortage of food and water in the surrounding

 - Outbreak of diseases and parasites

 - Damage of brood combs

 - Inadequate ventillation

 - Dampeness and bad smell

 - Sick or infertile queen

 - Overcrowding / congestion

 - Unfavourable weather conditions e.g very high

 temperature  ***(Any 4 x 1/2 = (2mks***)

7. - The temperature should be maintained at 37.5oc - 39.4oc

 -Relative humidity should be maintained at 60%

 - There should be proper ventilation in the incubator

 -Regular turning of eggs to avoid the germinal disc sticking onto the egg shell

  ***4 x 1/2 = (2mks***)

8. - Oxytocin

 - Adrenaline ***2 x 1/2 = (1mk***)

9. 18th March 2019  ***(1mk)***

10. - Have the ability to kill ticks

 - Be harmless to both man and livestock

 - Be stable

 - Should remain effective even after having been fouled with dung mud or hair ***4 x 1/2 = (2mks***)

11. - Bull ring ***( 1/2 mks)***

12.- Age

 - Stage of lactation period

 - Udder attachment

 - Incomplete milking

 - Mechanical injury

 -Poor sanitation

 - Poor milking technique  ***(Any 4 x 1/2 = (2mks***)

13.- When inspecting the animal to acertain any

 abnormality or signs of diseases

 - When administering any form of treatment to the animal

 - When spraying or hand dressing the animal with

 chemicals to control external parasites

 -When milking the animal

 - When performing some of the management practices such as dehorning (castraction etc)

 ***(Any 4 x 1/2 = (2mks***)

14.- All broken parts should be repaired to avoid leaking

 - Any cracks in the surface of the walls should be sealed

 - The area around the silo should be kept clean by slashing vegetation to keep of rodents

- Cleaning and disinfection should be done at regular intervals

 ***(Any 3 x 1/2 = (11/2 mks***)

15. Large white and land race

(a) **Large white** **Land race**

- Has upright ears -Has drooping ears

- Slightly dished snout - Has straight snout ***1 x1 = (1mk***)

(b) **New zealand white California white**

-Pure white in colour - White with same parts

 its body being black eg nose , tail

 ***1 x1 = (1mk***)

(c) Dromedary camel Bactrian camel

 - Has one hump - Has two humps

 - Less for covering -more fur covering its body ***1 x1 = (1mk***)

16.- Nose

 - Mouth

 - Anus

 - Eyes

 - Reproductive tract

 - Cloaca

 - Ears ***(Any 3 x 1/2 = (11/2 mks***)

17.(a) Piston - Compresses the air fuel mixture in the combustion chamber  ***(1mk***)

(b) Crankshaft - Converts the reciprocating motion of the piston into a rotary motion

 - Transmit power to the belt pulleys and the wheels

 ***(Any 1 x 1= (1mk***)

 (c) Spark plug -produces a spark that ignites the

 petrol - air mixture/air fuel mixture ***(1mk***)

18. Metacercaria  ***(1/2mk***)

 **SECTION B**

19. (a) Dry cow therapy ***(1mk***)

 (b) To control mastitis ***(1mk***)

 (c) Two months two calving / when the cow is seven months pregnant /during drying off ***(1mk***)

 (d) - Free from contageous diseases

 - Physically clean

 - Wear white overall

 - Short fingernails

 - Hair covered ***2x1 = (2mks***)

20. A) scriber ***(1mk***)

 B) wire stainer ***(1mk***)

(b) Tool B marks two parallel lines along the edge of a stock while tool C marks one a parallel line along the edge of a stock  ***2mks (mark as whole )***

(c) Marking points for drilling in woodwork (1mk)

21(a) - Fermentation of food

 - Synthesis of vitamin B complex

 - Synthesis of Amino acids from ammonia gas

 - Breakdown of proteins to peptides , amino acids and ammonia

 - Breakdown of carbohyrates and cellulose to carbon (iv) oxide and volatile fatty accids ***2 x1= (2mks***)

 (b) Presence of many folds that grinds and sieves the food ***(1mk***)

(c) Cattle , sheep , goat ***(1mk***)

(d) Caecum ***(1mk***)

22(a) Battery cage system ***(1mk***)

(b) - Individual bird record can be kept

 - Clean eggs are obtained

 - Reduced vices like cannibalism and egg eating

 - Reduced incidence of parasite and diseases

 - Feeding and watering of birds can be mechanized

 - Easy to detect sick birds

 - Broodness is discouraged as birds do not reach the eggs

 - Has a high stocking rate per unit area

 - Prevents bullying during feeding ***(Any 2x1=2mks***)

22.(c) - Deep litter

 - Free range

 - Fold system ***(Any 2x1=2mks***)

**SECTION C (20mks)**

23 (a) - Providing proper housing with good ventilation well drained, rain proof roofs and adequate spacing for the animals to control diseases like coccidiosis

- Proper selection and breeding to prevent diseases such bruselosis

- Dust or dipping animals with appropriate acaricides regulary to control tick-borne disseases

- Drenching with suitable antihelmintes to control diseases like fascioliasis

- Providing enough and well balanced feeds to control nutritional deficiency diseases

- Maintaining high degree of hygiene in animal houses regularly and use of disinfectants

-Isolation of sick animals from healthy ones to prevent spread of diseases

- Vaccination of animals against diseases such as anthrax

- Quarantine of animals during outbreak of notifiable diseases

- Proper disposal of animal that have died of serious diseases

- Prompt treatment of sick animals using suitable drugs

- Use of prophylactic drugs to control diseases such as

 coccidiosis ***(Any 10x 1= 10mks)***

23(b) ***Preparation of sow 1 week before parturition***

1. Deworm the sow

2. Wash / clean against external parasites

3. Take the sow to farrowing pen 5-7 days before expected date of farrowing

4. Clean and disinfect teh furrowing pen

5. Provide furrowing crates

6. Provide dry bedding to the creep area

7. Reduce sows’ ration a day before furrowing

  ***(Any 6 x 1 = 6mks)***

23(c) - Durability of the material

 - Availability of material

 - Workability of the material

 - Suitability in the prevailing weather

 - Strength of the material

 - Cost of the material

 - Use/purpose of the structure  ***(Any 4x 1 = 4mks)***

24(a) Tractor - drawn plough Ox-drawn plough

1. - Expensive to buy - Cheaper to buy

 - Can be used on hard soils - Only used on soft soil

- Heavy , hence requires more - Light . hence requires less

 pulling force pulling force

- Expensive to maintain - Cheaper to maintain

-Used for few farm operations - Used for more farm operations

- Requires more skills to operate - Less requires to operate

- Operated by one person - Operated by more than one person

- Faster and works on a big area - Slower and works on a smaller area

 for given time per given time

- Only used on flat/gently sloping - Used on steep areas

 area

- Ploughing depth is deep - Ploughing depth is shallow

- More reliable since is not - Less reliable due to fatigue and

 subjected to fatigue & sickness sickness  ***(Any 8x 1 = 8mks)***

24(b) ***Life cycle of 3 host tick***

- Eggs on the ground hatch into larvae

- Larvae cumbs onto the first host , suck blood, get engorged and drops to the ground

- On the ground it moults into a nymph

- Nymph climbs onto the second host, suck blood, get engorged and drops to the ground

-On the ground it moults into an adult

- The adult climbs onto the third host suck blood, get engorged and mate

- The adults female crops to the ground to lay eggs

 ***( 8x 1 = 8mks)***

24(c) - Ambient temperature

 - Type of feed eatern

 - Body size/weight

 - Species of the animal

 - Level of production

 - Age of the animal

 - Health /Physiological status

- Breed of the animal ***(Any 4 x 1 = 4mks)***

25(a) Casual organisim - Protozoa / Elmeria species  ***( 1mk)***

(ii) Animals attacked - Poultry , calves , kids, Lambs , Kindlings ***(Any2 x 1 = 2mks)***

***(iii) Symptoms***

- Diarrhoea

- Dysentry / Bloody dung

- Emaciation

- Ruffled feathers

- Dullness with dropping wings

- Sudden death  ***(Any 4 x 1 = 4mks)***

***Control***

- Use of coccidiostats

- Isolation

- Observing hygiene/ Proper sanitation

- Avoid overcrowding

- Avoid dumpness in houses  ***(Any 3 x 1 = 3mks)***

25(b)

- Short calving intervals

- Early maturity

- Have no humps

- Low tolerance to high temperature

- Highly susceptible to tropical diseases

- High production to milk and meat

-Not hardy / cannot withstand adverse weather conditions

- Cannot walk for long distances