Name ………………………….………………………….. Adm No …………….

443/2

Agriculture **Marking Scheme**

Paper 2

Time: 2 HOURS

**FORM FOUR END OF TERM 2, 2019**

**INSTRUCTIONS TO ALL CANDIDATES**

1. Write your name and admission number in the spaces provided above.
2. This paper consists of three section A, B and C
3. Answer all questions in section A and B and any other questions in section C
4. Answers should be written in the spaces provided

**FOR EXAMINERS USE ONLY**

|  |  |  |
| --- | --- | --- |
| **SECTION** | **MAXIMUM SCORE** | **CANDIDATES SCORE** |
| A | 30 |  |
| B | 20 |  |
| C | 40 |  |
| **TOTAL** | **90** |  |

1. State **four** signs of good health in a cow. (Any 4 x ½ = 2)
2. Normal appetite
3. Normal posture
4. Normal pulse rate/heart beat rate
5. Normal body temperament
6. Normal behaviour
7. Normal /high production
8. Normal breathing rate/respiratory ratio
9. Normal colour of urine
10. State **four** dairy cattle breeds reared in Kenya (Any 4 x ½ = 2 mks)
11. Friesian
12. Ayrshire
13. Guernsey
14. Jerseys
15. State **four**  advantages of embryo transplant (Any 4 x ½ = 2 mks)
16. Controls breeding diseases
17. Prevents injury of cows by large bulls
18. Embryo can be stored for long awaiting a recipient mother
19. Embryos are easy to transport
20. Calf is born in the local surroundings hence better adapted
21. Helps a cow that was not ready to produce milk to be productive
22. List **four** characteristics of a good dairy cow (Any 4 x ½ = 2)
23. Wedge/triangular shaped
24. Straight top line
25. Wide hind quarters
26. Large stomach
27. Prominent milk veins
28. Large udders with 4 large well-spaced teats
29. Give **two** reasons why honey is harvested in the evening (any 2 x ½ = 1 mk)
30. To avoid damaging the brood (young bees)
31. To avoid contaminating honey
32. To avoid bush fires
33. State **two** methods recommended for identifying goats (any 2 x ½ = 1 mks)
34. Ear tagging
35. Ear notching
36. Photographing
37. Use of neck straps and neck chains
38. Branding
39. Ear tattooing
40. State **two** advantages of using wood in farm buildings ( any 2 x ½ = 1 mk)
41. It is cheaper (rej. it is cheap)
42. It is attractive
43. It is workable
44. It is easily available
45. State **four** characteristics of succulent roughage (any 4 x ½ mks)
46. High carbohydrate content
47. High moisture content
48. High digestibility
49. Low dry matter content
50. Low protein content
51. What is the significance of microbial activities in the rumen? (4 x ½ = 2 mks)
52. Fermentation of carbohydrate.
53. Proteins digested to amino acids and ammonia
54. Digestion of lipids to volatile fatty acids
55. Breakdown of cellulose to simpler carbohydrates
56. State **four** factors that affect digestibility in livestock feeds 4 x ½ = 2 mks)
57. Ratio of energy to proteins (carbohydrates to proteins)
58. Form in which the food is given
59. Quantity of food already in the digestive system
60. Chemical composition of the feed
61. Name the tool used for the following functions (2 x ½ = 1 mk)
62. Pipe wrench (accept adjustable spanner)
63. Pliers
64. Name the livestock disease associated with deficiency of the following in the diet (2 mks)
65. Anaemia ½ x 1 = ½ mk
66. Goitre ½ x 1 = ½ mk
67. Swayback in lambs ½ x 1 = ½ mk
68. Grass tetany/grass staggers/hypomagnecaemia ½ x 1 x ½ mks
69. List **two** methods of controlling rinderpest in cattle (any 2 x ½ = 1 mk)
70. Quarantine
71. Vaccination every 6 months
72. Disinfecting cattle houses
73. Use of disinfectants on wounds
74. Kill and dispose carcass properly
75. Name **two** functions of crop in digestive system of chicken 2 x ½ mk)
76. Stores food temporarily
77. Moisten/soften the food (Rej. digest food)
78. State **three** differences between dromedary and bactrian camel ( 3 x ½ = 1 ½ mks
79. **Dromedary**
80. Has one hump
81. Less hairy
82. Taller
83. **Bactrian**
84. Has two humps
85. More hairy
86. shorter
87. State **two** reasons why maintenance of farm structures is important. Any 2 x ½ mk)
88. To make them more durable (long lasting)
89. To take them efficient
90. To avoid accidents
91. To reduce cost of replacement
92. Name **two** kinds of livestock which can be castrated using a rubber ring (any 2 x ½ = 1 mk)
93. Kids/male goats/billies
94. Rams/male sheep
95. Male Calves/male cattle

(Rej cow, pigs & piglets)

1. Name **two** ways of improving milk production in a herd of indigenous dairy goats (any 2 x ½ mk)
2. Proper feeding
3. Control diseases and parasites
4. Upgrading/grading up
5. proper housing
6. Outline **four** advantages of Kenya Top Bar Hive over the log hive (any 4 x ½ = 2 mks)
7. Allow removal of honey combs without disturbing the brood
8. It is easy to construct
9. It is cheaper to construct
10. Prevents contamination of honey
11. Top bars can be removed to inspect combs without problem
12. More honey and wax are harvested

**SECTION B – 20 MARKS**

1. Dry cow therapy 1 x 1 = 1 mk
2. Mastitis 1 x 1 = 1 mk
3. State **two**  symptoms of the disease controlled by the practice above (Any 2 x 1 = 2 mks)
4. Swollen teats/udders/mammary glands
5. Milk with pus or blood
6. Milk with clots
7. Drop in milk production
8. Refusal to suckle / kicks
9. Watery milk
10. State **two** predisposing factors of the disease controlled by practice above (any 2 x 1 = 2 mks)
11. Incomplete milking
12. Age of the animal
13. Udder attachment
14. Poor sanitation in the animals surrounding
15. Presence of injuries on the udder
16. presence of sharp objects.
17. Identify each tool (any 2 x 1 = 2 mks)

Y – open ended spanner (Reject spanner alone )

Z- Prunning knife

1. State the functions of each tool (2 mks)

Y – Opening and closing bolts and nuts of a specific size (1 x 1 = 1 mk)

Z – Pruning/trimming tea by stroking (1 x 1 = 1 mk)

1. State **two** maintenances practices carried out on the tool marked Z. (any 2 x 1 = 2 mks)
2. Sharpening the cutting edge
3. Cleaning after use
4. Repairing broken parts
5. apply oil on metallic parts for long storage.
6. .
7. Identify each parasite (any 2 x 1 mks)
8. L – tick
9. M – round worm
10. State **two** negative effects on animals caused by each of the parasites (any 2 x 1 = 2 mks)

**L**

1. Suck blood causing anaemia – cause irritation
2. Transmit/spread livestock diseases
3. Lower quality of hides & skins
4. causes irritation

**M**

1. Cause irritation
2. Blockage of internal organs
3. causes wounds or injuries
4. Robs food.
5. State **one** method of control for each parasite (any 2 x 1 mk)

**L**

1. Rotational grazing
2. Spraying with suitable acaricides
3. Burning infested pastures

Rej. spraying alone

**M**

1. Regular deworming
2. Rotational grazing

**SECTION C (40 MARKS)**

**Answer any TWO questions from this section in the answer booklet provided**

1. (a) Describe the working principles of a four stroke cycle of a petrol engine (12 marks
2. **Induction stroke**

* Piston moves down
* Inlet valve open
* Exhaust valve closed
* Fresh air fuel mixture enters the combustion chamber

1. **Compression stroke**

* Inlet valve closed
* Exhaust valve closed
* Piston moves up compressing the fuel-air mxture

1. **Power Stroke**

* Inlet valve closed
* Exhaust valve closed
* Piston moves further up compressing fuel – air mixture further
* Spark plug releases a spark to the fuel – air mixture to egnite

1. **Exhaust stroke**

* Inlet valve closed
* Exhaust valve open
* Piston moves up
* Exhaust gases are released

**(1 mk for mentioning 2 mks for orderly description**

(b). State the components of power transmission system and one function of each component (8 mks)

1. Clutch

* connects and disconnects the drive shaft to or from the engine
* enables the tractor to take off gradually and smoothly

1. Gear box

* Allow selection of any forward/ reverse gears
* Allow stopping of the tractor without stopping the engine
* Allow change of tractor speed

1. Differential

* Allow change in the direction of drive at right angles
* Allow rear wheels to travel faster or slower than the front wheels

1. Final drive

* Propels the tractor forward or backwards enabling the tractor to do useful work

(1 mk for mentioning 1 mk 1 for any 1 use)

1. (a) Discuss Newcastle disease under the following sub headings
2. Causal organisms (1 mk)

Virus

1. Signs of attack (7 mks)

* Dullness
* Loss of appetite
* General body weakness
* Beak remains wide open and the neck is strained
* Ruffled feathers
* Difficulty in breathing
* Birds stand with eyes closed all the time
* The bird shakes the head to remove mucus
* Staggering and dropping winds
* Watery greenish diarrhea
* Eggs with soft shells

1. Control measures (Any 2 x 1 = 2 mks)

* Quarantine
* Killing and disposing the carcasses by burning
* Cleaning and disinfecting birds house before bringing in new stock
* Regular vaccination

(b). Outline the various management practices in a fish pond that ensure maximum yields of fish (5 mks)

1. Feeding
2. Fertilizing (adding manure or fertilizers) in the pond
3. Control of predators
4. Water control
5. Restocking the pond
6. Weeding/weed control
7. Cropping
8. Harvesting

© State **five** disadvantages of free range system of rearing poultry (5 mks)

1. It reduces cannibalism and egg eating
2. Birds have plenty of exercise to keep them healthy
3. It reduces the cost of providing grit as birds pick it from soil
4. Manure is evenly/uniformly distributed in the (Rej equally distributed)
5. It requires less capital to establish and maintain
6. (a) Describe **six** advantages of artificial insemination over natural mating (6 mks)

* Semen from one superior bull can be used to serve many cows.
* Controls spread of breeding diseases.
* Bulls which are unable to serve cows due to heavy weight can be used to produce semen.
* It prevents large bulls from injuring small cows.
* It reduces the cost of keeping bulls.
* Famers who cannot afford bulls can have their cows served at a low cost.
* Semen can be stored for a long time even after the bull dies.
* It makes it easy to control in breeding.
* It eliminates dangerous bulls from the farm

(b). List **four** types of fences (4 mks)

1. Live fences/hedges/electric wire fence
2. Woven wire fence
3. Post and rail fence
4. Chain link fence
5. Wooden/timber fence
6. Plain wire fence
7. Barbed wire fence
8. Stone fence

© Describe the advantages of fences (Any 10x1=10 mks)

1. They prevent crops from being damaged by livestock and wild animals
2. They provide privacy to the farm
3. They improve aesthetic/beauty value of the farm
4. Ease mixed farming
5. They mark the boundaries of the farm
6. They facilitate rotational grazing
7. They can allow for isolation of sick animals from the health ones.
8. They control spread of pest, parasites and diseases
9. They provide security in the farm (prevent intruders) from the farm
10. Prevent creation of unnecessary paths in the farm
11. Live fences act as wind breakers (specify live fences)
12. They can enhance controlled mating
13. Live fences/hedges act as sources of livestock feed (specify live fences)