443/2
AGRICULTURE
JULY, 2019
PAPER 2
Marking scheme

BUURI EAST STANDARDS

Kenya Certificate of Secondary Education
AGRICULTURE 443/2

SECTION A: (30 MARKS)

1. Categories of infections diseases in livestock.

   Bacterial, viral, fungal, protozoan

   4 x ½ = 2mks

2. a) Methods of identification used in livestock.

   - Branding
   - Ear tagging
   - Ear notching
   - Tattooing
   - Neck strap, chain leather or chain strap

   Mark first four point

   4 x ½ = 2mks

   b) Reasons for identification

   - Allows selection for breeding purposes.
   - Enables culling of low producing animals
   - Facilitates oppropriate treatment of animals
   - Make it easy to identify animals that deserves special feeding
   - Stolen animals are easily recovered
   - Allows good keeping of animals record

   Mark first four point

   4 x ½ = 2mks

3. Distinguish between the following breeds of livestock.

Large white – the skin may have a few blue spots. The snout is slightly dished and broad. The ears are upright, while Landrace – it has a straight snout and long ears dropping over the face.

Mark correct statement and well distinguished

2 x ½ = 1mk

b) Newzeland white – its white and has red eyes while California white is white in colour with one or more of the following parts being blacks ears; nose paws and tail

Mark correct statement and well distinguished

2 x ½ = 1mk

4. a) Digestibility – refers to the portion of food retained in an animal's body after taking care of the losses through urine, feaces, and gases

Mark correct definition

1 x 1 = 1mk

b) Factors determining the amount of food given to an animals.

- Body size or weight of animals
- Environmental conditions within which an animal lives
- Physiological conditions of the animal
- Level of production
- Purpose for which the animal it kept

Mark first two points

2 x ½ = 1mk

5. Causes of vices in poultry

- Birds being left idle for long.
- Introduction of a new bird into the old flock.
- Presence of underbeaked birds in the flock.
- Keep birds that are not of the same age.
- Leaving the laid eggs uncollected for long.

- The laying nests being brightly lit.
- Lack of balanced diets.
- Overcrowding in poultry houses.
- Presence of ecto – parasites in birds.
- Leaving the broken eggs uncollected
- Presence of wounds on the birds
- Prolapsed of the cloaca.
- Barren environment that restricts behavior expecially normal nesting and forging behavior.

Mark first four point

4 x ½ = 2mks

6. Notifiable diseases in cattle.

- Anthrax
- Rift valley fever
- Foot and mouth diseases
- Rinderpest
- Black quarter

Mark first four point

4 x ½ = 2mks

7. Routes through which disease causing micro – organism enters the animals body.

- Ear
- Nose
- Anus
- Umbilical cord
- Mouth
- Eye
- Mammary glands
- Reproductive organs

Marks first four point

4 x ½ = 2mks

8. Structural features of ideal calf pen.

- Concrete floor
- Adequate space
- Single housing
- Proper lighting
- Proper drainage
- Draught free
- Leak proof roof

Mark first four point

4 x ½ = 2mks

9. Types of lubrication systems

- splash freed types.
- Force feed type
- Oil mist type

3 x ½ = 1 ½ mks

10. Tools required for each of the following operation.

- Cutting wool from sheep – wool shear.
- Castrating piglets – scapel or razol blade.
- Cuttings threads of metallic pipe – stock and die.
- Placing motor between construction stones – masons trowel

4 x ½ = 2mks

11. Effect of external parasites attack to livestock.

- Sucking blood from the host leading to anaemia.
- Creating wounds on the skin hence causing damage to the hides and skin.
- Causing irritation and discomfort to the animals.
- Transmitting diseases to the animals.
- Causing death when the host is heavily infested.

Mark first four point

4 x ½ = 2mks

12. a) Causes of soft shelled eggs in chicken.

- Lack of calcium in their bodies
- An attack of Newcastle diseases

2 x ½ = 1mk

13. Qualities of clean milk

- Should be white in colour
- Should be free from foreign particles such as hair and dust.
- It should have a good keeping qualities.
- It should be free from pathogens.
- Free from bad odours and should have good flavours.
- It should have required nutrients composition and in their right proportion.

Mark first four point

4 x ½ = 2mks

14. Methods of selection of livestock

- Mass selection
- Progeny testing
- Contemporary comparison

3 x ½ = 1 ½ mks

15. Functions of the following in petrol engine.

i) Carburetor
- Vaporizes petrol
- Mixes petrol vapour with air
- Has a choke and a throttle that enables regulation of air

ii) Radiator – cools hot water from the engine.

iii) Thermostat – regulates engine temperature by controlling the switching on and oH of the fan.

3 x ½ = 1 ½ mk

SECTION B: (20MKS)

16. a) Name of the parts labelled

B - inner membrane rej. Shell membrane
C - Outer membrane rej. Shell membrane
D - Albumen / egg white
F - Chalaza

4 x ½ = 2mks

b) Qualities of part labelled A that should be considered when selecting eggs for incubation.

- It should have smooth shell.
- No crack/free from cracks
- Should be clean to ensure that pores are open

Mark first

c) Functions of E in a fertilized egg.

- Supply all the embryo requirement since it contains food reserves for developing chick

1 x 1 = 1mk

17. i) Identify the farm structures- wire fence. 1 x 1 = 1mk

ii) Name of the parts

A - Barbed wire

B - Corner post

C - Standard post

D - Strut

4 x ½ = 2mk

iii) Maintenance practices carried out in the structure

- Tighten lose barbed wire
- Brocken post should be replaced

2 x 1 = 2mks

18. a) Name the parts labelled

P - Rumen
Q - Recticulum
R - Omasum
S - Abomasum

4 x ½ = 2mk

b) Functions of parts labelled r

Absorption of water 1 x 1 = 1mk

c) Reasons that make livestock with above parts above E digest cellulose food materials.
- Their rumens contains micro – organism that assist in the digestion of cellulose.
- They can regurgitate food back to the mouth for further chewing.

2 x ½ = 1mk

d) Parts where nylon paper be found if fed on by an animal with the above digestive system.

Q – recticulum

1 x 1 = 1mk

19. $^{3}/_{100}$ x 400kg = 12kg give 1mk

$^{50}/_{100}$ x 12kg = 6kg give 1mk

Dairy meal

$^{100}/_{80}$ x 6 = 7.5kg give 1mk

Maximum score = 3mk

b) Effect of overstocking in pasture management.

- Insufficient growth period for the forage.
- Leads to loss of soil cover which leads to loss of soil erosion.
- Inversion of undesirable plants species i.e weeds and shrubs.

Mark first two points

2 x 1 = 2mk

SECTION C:

20. a) factors to consider when selecting a breeding stock.

i. Age – young animals, those that have parturated for not more than three times, should be selected. This is because they have longer productive life. Old animals are low producers and poor breeders.
ii. Level of performance – only those animals with the highest production level should be selected.
iii. Physical fitness – animals selected should be free from any physical defects such as beings mono – eyed, limping, irregular number of teats, scrotal hernia or defective and weak backlines if's likely that these could easily be passed to the offspring.
iv. Health – animal selected must be healthy. Sick animals do not breed well and those falling sick frequently are expensive to keep. Animals that are resistant to diseases pass these characteristics to their offspring.
v. Adaptability – animals selected should be well adapted to the prevailing climatic conditions in the area.
vi. Mothering ability – animals selected should have a good mothering ability, i.e animals with good natural instinct towards their young ones. This will enable them to rear young ones up to weaning.
vii. Quality of produces – select animals that give products of high quality e.g in wool production, breeds that produces fine, long, elastic and pure white wool are selected.
viii. Temperature/behavior – some animals within a breed might have bad or undesirable behavior such as cannibalism and egg eating in the case of poultry, aggressiveness and kicking in the case of dairly cattle. Such animals should be culled.
ix. Body conformation – animals for breeding should be selected according to their proper body conformation.

x. Prolificacy – animals selected should be highly profifier i.e animal with an ability to give birth to many offspring at a time (large litter)

Mark first five points well explained

5 x 2 = 10mks

20. b) General methods of disease control in livestock.

i. Providing proper housing with good ventilation, well drained, rain proof roofs and adequate spacing for the animals to control diseases like coccidiosis, pheumonia.
ii. Proper selection and breeding i.e selecting healthy animas for breeding to prevent diseases such as burcellosis.
iii. Dust or dip animals with appropriate acaricides regularly to control tick borne disease e.g ECF.
iv. Drenching with suitable antihelmintics to control diseases such as fasciolasis.
v. Providing enough and well balanced feeds to control nutritional deficiency diseases such as animal and milk fever.
vi. Maintaining high degree of hygiene e.g use of disinfectants and cleaning the animals house regally.
vii. Isolation of sick animals from healthy ones to prevent spread of diseases such as foot and mouth diseases.
viii. Vaccination of animals against diseases such as anthrax, Newcastle.
ix. Quarantine of animals during outbreaks of notifiable diseases such as foot and mouth diseases.
x. Incorporation of prophylactic drugs into feeds and water to control diseases such as coccidiosis.
xi. Proper disposal of animals that have died of serious diseases e.g anthrax by burying them deeply to prevent spread of the diseases.
xii. Prompt treatment of sick animals with the correct drugs to control diseases such as mastitis.

Mark any well explained points

10 x 1 = 10mks

21. a) i) Casual organism

Virus of A, C D (1mk)

ii) Livestock attacked

cattle
sheep
goat
pig

iii) Symptoms

a) Emaciation
b) Drop in production
c) Woulds/blister in mouth and feets
d) Lameness
e) Fever, dullness and loss of appetite
f) Smacking of the mouth 1 x 4 = 4mks

iv) Control measures

- Quarantine
- Vaccination every 6 months
- Slaughtering affected animals 3 x 1 = 3mks
- Disinfection of animal hooves to stop the spread

21. b) The life cycle of a one – host tick.

- Female lays its eggs on the ground
- Laid eggs hatch into larvae within a period of 4 to 6 weeks
- Larvae climb on grass
- Larvae wait for any suitable passing animal to act as a host
- Larvae attaches itself on the host and sucks blood
- The larvae becomes engaged and mouths into nymph
- White still on the same host and sucks blood.
- The nymphs mouths and adult emerge.
- Adult feed on blood from the same host.
- The adult mate on the same hoot, engorge and fall down.
- Adult starts laying eggs and life cycre containues.

1 mark correct procedure (1 x 10 = 10mks)

22. a) Differences between a disc and a mouldboard plough.

	Disc Plough	**Mouldboard plough**
i.	It can be used on field with obstacles such as stones, roots and stumps because of rolling action of the disc.	Its rigid and slides along in operation , therefore, it cannot be used in fields which have hard soil, stones, rots or

		stumps because it cannot ride over them.
ii.	Does not invert furrow slices completely. Therefore, it leaves a rough field.	It inverts furrow slices completely leaving a clean fields
iii.	More secondary operations are necessary after a disc plough has been used.	Fewer secondary operations are needed
iv.	A disc plough cut at varying depths because whenever it comes a cross obstacles it rides over them.	A mouldboard plough operates an uniform depth because once the share is in the soil it fallows the same depth
v.	Its not easily broken by obstacles because it rides over them	Its rigid and, therefore can be easily broken by obstacles if come across
vi.	It requires less power to pull when operating.	It requires more tractor power to pull when operating.

Mark any five correct points 5 x 1 = 5mks

b) Five disadvantages of animal – drawn implements compared to tractor – drawn implements.

- More tedious to use than tractor – drawn implements.
- Animals get tired at times slowing down wall.
- Prevalent diseases in some areas make it difficult to use some animals.
- Farmer need to set aside a piece of land where they either grow a fooder crop or develop pasture for the animal.
- More than one person is required to guide the plough and animal while cultivating.
- Animal – drawn implements are slower than tractor drawn implements.

Mark first five points

1 x 5 = 5mks

22. c) Reasons for maintaining farm tools and equipments.

i) To increase durabilify.

Properly maintained and well cared tools last longer in the farm.

ii) to reduce the replacement coast.

Tools and equipment are expensive to buy and replace. If well taken care of the last longer.

iii) increased efficiency.

Well maintained tools work better and more efficiently to give a clean, well finished piece of work.

iv) To avoid injury to the user.

Using a poorly kept tool might result to injury of the user e.g using a blunt cutting tools which has a broken handle leads to development of blisters on the hand of the user.

v) To avoid damage to the tool.

Tool that is proorly maintained ends up getting damages due to the force used in working with it.

5 x 2 10mks

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