

AGRICULTURE PAPER 2

MARKING SCHEME

SECTION A (30 MARKS)

1. Types of roughages.

- (i) Succulent roughages
 - (ii) Dry roughages
- 2x1/2=1mk

2. Reasons for docking in sheep rearing.

- (i) For easier mating
 - (ii) Facilitate even distribution of fat in the body.
 - (iii) Prevent blowfly infection.
- 2x1/2 =2mks

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

a) **Deworming animals (1/2 mk)**

- Drenching gun, bolus gun, narrow bottle.
- 1x1/2 mks

b) **Ear notching (1/2mk)**

- Ear notcher
- (1x1/2 =1/2 mks

4. Define the following terms

(i) **Zoonotic diseases-**

- a disease that can be transmitted from animal to human being

1x1/2mk=1/2mks

(ii) **Predisposing factors**

- Condition inside or outside the body of an animal which lead to an animal contracting a disease or injury..

1x1/2mk=1/2mks

5. Economic importance of internal parasites.

- Retarded growth / emaciation / malnutrition
- Lower production
- Diarrhoea / constipation
- Damage to organs / blindness / pneumonia
- Irritation
- Blockage of organs
- Death
- Anaemia
- Loss of appetite

4x1/2=2mks

6. Qualities of concrete which make it suitable for construction of farm building.

- Fire proof
- High durability
- Easy to clean

2x1/2=1mk

7.

(i) **Mothering ability** – ability of the mother to take care of the young ones.
(1x1/2=1/2 mk)

(ii) **Prolificacy** – ability of the mother to give birth to many offspring at a time (large litter)
1x1/2=1/2mk

8. **State two advantages of using wood in farm building.**

- They are workable
- They are cheap
- They are fairly strong
- Can be re-used.

2x1/2=1mk

9. **Differences between dromedary and bactrian camel.**

- Bactrian species have two humps while dromedary has one hump.
- Bactrian species smaller in size than dromedary
- Bactrian species has more fur coverage on the body as compared to dromedary.

3x1/2=1 1/2mks

10. **What do the figures in the ration 1:2:4 stand for in construction.**

1-Cement

2-Sand

3-Ballst / Aggregate

1 1/2mks

11.

(i) **Stock and die**
To cut threads in metal pipe during plumbing
1x1/2=1/2 mk

(ii) **Oil stone**
Sharpening edges of cutting tools.
1x1/2=1/2 mk

12. **Use of the P.V.C sheet when laying a foundation of a farm structure.**

- Prevents termites from rising up the wall.
- Prevents moisture from rising up the wall.

2x1/2=1mk

13. **Three methods of applying acaricides on livestock.**

- Spraying
- Hand dressing e.g. using pyrethrin grease
- Dipping

3x1/2 =1 1/2 mks

14. **What should be done to a ram during the mating season to enable a farmer to identify the ewes it has mated?**

- Apply tapping paste / mark some coloured paint on the belly of ram / raddling / breeding chute.

1x1=1mk

15.

(i) **Mortality**

- Possibility of death occurrence in the diseases outbreak.
1x1=1mk

(ii) Incubation period

- Duration between the contact with the disease germs and appearance of the symptom or time of infection and the time the first symptoms show up.
1x1=1mk

16. Recommended methods of identifying goats.

- Ear tagging
- Ear notching
- Neck straps / chain with numbers

2x1/2 = 1mk

17. Two methods used in castration of cocks.

- Chemicals method using the hormone
- Stilbestrol
- Surgical method

2x1/2 = 1mk

18.

a) Advantages of Kenya Top Bar Hive over the Log hive.

- The Top Bar can be removed for inspection of the combs and replaced.
- Honey combs can be removed without disturbing the brood.
- Honey is of high quality as it harvested from brood combs
- More wax is harvested as combs are not returned to the hive.
- The hive is easy to construct and repair
- The hive is cheap build and does not require expensive equipment to extract honey.
- A queen excluder can be used in the centre of the hive to separate honey.

4x1/2 = 2mks

b) State two functions of the crop in the digestive system of a hen.

- To store food temporarily
- To moisten it with water.

1x1/2 = 1/2mk

19.

a) Significance of microbial activities in the rumen.(2mks)

- Fermentation of food
- Synthesis of vitamin B complex (B₁, B₂, B₆) and vitamin K.
- Synthesis of amino acids from ammonia gas
- Breakdown of proteins to peptides, amino acids and ammonia.
- Breakdown of carbohydrates and cellulose to carbon dioxide and volatile acid.

b) State six methods a farmer can use to control livestock diseases.

- Use of prophylactic drugs
- Use of disinfectants and antiseptic
- Isolation of the sick animal from the healthy ones.
- Imposition of quarantine

- Vaccination/ immunization
- Slaughtering of sick animal
- Proper disposal; of carcass.

6x1/2=3mks

20.

a) Name four methods of dehorning .

- Use of dehorning wire / saw
- Use caustic potash stick (potassium hydroxide)
- Use of disbudding iron
- Use of rubber ring and elastrator
- Use of dehorning collision

4x1/2 = 2mks

b) State the gestation period for a cow.

270-285 days

1x1/2 = 1/2 mks

SECTION B (20MKS)

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

21. The diagram below represent farm tools and equipment

a) Identifying labelled E and F.

E – Open ended spanner (1mk)

F – Ring spanner (1mk)

b) Use of each of the tools labelled F and G.

F- Loosening and tightening specific sized nuts and bolts

1x1=1mk

G- Digging and collecting manure / trash

1x1=1mk

c) State one advantage the tool labelled F has over E.

F- Provides a more grip on nuts and bolts.

- It can work on nuts / bolts on digression.

22.

a) Identify the condition or deficiency disease as illustrated in J and K above.

J – Curved toe paralysis

K – Milk fever

b) Cause of the deficiency condition in J,K.

J – Deficiency of vitamin B₂

K – Deficiency of calcium

c) Way to control condition K in lactating cows.

- Treatment using calcium borogluconate solution intravenously
- Providing feed rich in calcium

23.

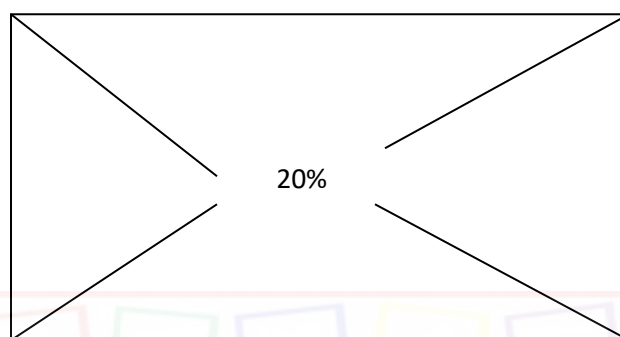
a) .

- (i) J- barbed wire fence 1x1=1mk

- (ii) T- barbed wire / barbs
S – Drooper 1x1=1mk
U- Braces / wire braces / ties 1x1=1mk
- (iii) S- prevent bending of wires / maintain tension
-stop the wire from sagging
1x1=1mk
U-support the post
-prevent the from falling
1x1=1mk

24. A dairy farmer is required to prepare 100kg of dairy meal containing 20% digestive crude protein (DCP). Using Pearson's method, calculate the quantity of soya bean (40% DCP) and maize (16% DCP) the farmer require for the dairy meal.(4mks)

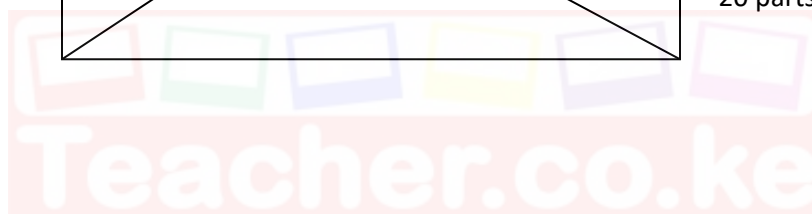
Soya bean 40%



4 parts of soya bean

Maize 16%

20 parts of maize



Total parts = 24 $\frac{1}{2}$ mk

Soya = $\frac{4}{24} \times 100 = 16.65\text{kg}$ $\frac{1}{2}$ mk

Maize = $\frac{20}{24} \times 100 = 83.3\text{kg}$ $\frac{1}{2}$ mk

Total = 3mks

SECTION C (40 MKS)

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

25.

- a) Five indicators that can be observed on a goat to confirm sickness.
- Over excitement, aggression, abnormal sound.
 - Dullness, restlessness
 - Limping , straining while walking
 - Abnormal posture while sitting / standing
 - Poor appetite
 - Larvae/ blood in stool
 - High temperature

- Abnormal urine colour.

5x1=5mks

b) Maintenance practices of a cattle dip.

- Dip tank should be cleaned regularly by removing sediments
- Broken timber rails should be replaced
- Repair broken cracks in various parts
- Roof should be maintained properly to avoid leakage which might dilute the dipwash.
- Clean the animals holding yard , footbath to remove mud or dung.

5x1=5mks

c) Procedure for harvesting honey from Kenya Top Bar hive.

- Carry out the practice in the morning or before darkness set in
- Approach the hive quietly from the back and blow 2-3 puffs with the help of a smoker.
- Remove the cover(roof).
- Remove the top bars one at a time using hive tool
- Gentle shake off the bees or brush them off using a bee brush.
- Cut the ready combs which are light coloured using a hive knife into honey container.
- Leave 3cm of the comb still attached to each bar.
- Leave some honey in the hives
- Return the bars ensuring no crevices are left.
- Return the hive cover into position.

10x1=10mks

26.

a) Describe six factors to consider when siting farm structure.

- The location of home stead- should be sited where it would be possible to have a good view of the farm.
- Accessibility- the structure should be easy to reach from most parts of the farm.
- Security of enterprise- e.g poultry houses should be sited near the homestead.
- Drainage / soil type – area should have a good drainage to prevent structures from being destroyed by water and also to prevent damp conditions that would encourage diseases infection
- Direction of prevailing winds- structures likely to lead to foul smell such as pigsty and latrines should be constructed on leeward side of the homestead.
- Relationship between structures- structures with related uses should be constructed close to each other so as to save time and labour.
- Farmers' tastes and preferences- some farmers may prefer to have homestead in sheltered places while others might not.
- Measness and amenities- e.g electricity, for power to run machines , water for domestic uses and irrigation
- Topography of the area/ gradient- area should be gently sloping as flat areas are prone to flooding while steep areas building may topple down.
- Space for future expansion – enough room should be set aside for future expansion in case of the increase of the enterprises.

Any 6x1=6mks

b)

(i) Fish farming in a fish pond under the following sub headings.

a) Stocking the pond.

- Introduce fingerling into the ponds
- Fingerlings should be from recognized hatches.
- Should be transported in oxygenated polythene bags or drums.
- During transportation water in containers should be clean at temperature of 10⁰c
- Introduce fingerlings by lowering the container into the water and tilting it to allow them to swim away.

Any 4x1=4mks

b) Feeding the fish.

- Fish are mostly fed with planktons, groundnut cake, kitchen water, slaughter house waste, leaves grass and manure.
- Provide with just enough feed as excess result to rotting thus pollute the pond.
- Change the feed gradually.
- Add manure/ fertilisers to encourage growth of planktons.

Any 4x1=4mks)

c) Harvesting fish.

- Drain the pond before stopping inflow water.
- Remove all the large fish using a siene net.
- Open the outlet to allow water to flow out
- Using a scoop net, catch the fingerling and keep them in a holding yard.
- Drain the pond completely.

Any 3x1=3mks)

(ii) Precautions observed when using tools and equipments.

- Handle tools carefully and correctly
- Use tools for right purpose designed for.
- Maintain tools- in good working condition
- Secure work firmly where possible.
- Avoid working on dangerous ground
- Learn how to operate tools before using it.

3x1=3mks

27.

a) Explain eight ways in which ticks can be controlled on a livestock farm.

- Burning infested pastures to kill developmental stages.
- Rotational grazing
- Hand picking and killing the ticks
- Double fencing of pasture land and farm to keep off infested animals.
- Plough pasture land to burry and kill the ticks.
- Top-dressing using lime to kill the ticks
- Spraying using acaricides (hand dressing / dipping) the animal to kill ticks
- Use natural enemies to kill ticks.
- Self licking to dislodge ticks from the body

½ mk for stating, ½ mk for explaining

8x1=8mks

b) Body conformation of a dairy cow.

- Have large and well developed udder.
- Have large stomachs which makes them heavy feeder
- Have prominent milk veins
- Have less flesh on their bodies/ lean bodies
- Have well set hind quarters to allow room for large udder.
- Have wedge shaped bodies
- Have long thick neck
- Have straight top line
- Have prominent pin bones.

4x1=4mks

c) **Five disadvantages of natural method of mating.**

- High chances of interbreeding or inbreeding is not controlled
- High chances of breeding disease transmission e.g brucellosis or parasites such as trichonomas spp
- Male require extra pasture to feed on
- Large males can injure small females.
- A lot of semen is wasted as single ejaculation produce semen that can serve several.
- It is cumbersome and expensive to transport a bull to hot areas to serve cows.

Any 5x1=5mks

d) **differences in digestion process between a ruminant and non-ruminant.**

Ruminant	Non-ruminant
- Chew curd/ regurgitate - Have four chamber stomach hence polygastric - Can digest cellulose - Have ptyalin - Most digestion and absorption takes place in rumen and stomach - Have alkaline saliva	- Do not chew curds. - Have one stomach hence monogastric - Cannot digest cellulose except those with caecum - Have ptyalin - Absorption takes place in the small intestine. - Have saliva that is neutral.

3x1=3mks