**FORM FOUR**

**AGRICULTURE PAPER TWO**

**MARKING SCHEME**

**1. Apiculture-** This involves the rearing of bees in structures known as beehives

**( 1x1 =1mark**)

**2a). Brown ear tick-**east coast fever and red water**. (1x ½ = ½ mark)**

b**). Tsetse fly**- trypanasomiasis.  **(1x ½ = ½ mark)**

3. **Intermediate host for liver fluke**- mud/water snail (reject snail alone) **(1x ½ = ½ mark)**

4**. Four rabbit breeds (4x ½ =2marks)**

*Californian white:*

*New Zealand white:*

*Flemish giant*

*Angora rabbit*

*Chinchilla*

*Ear lops.*

***Kenya white***

***5. Function of the crop (2x ½ =1mark)***

Storage of food.

Softening of food by secretions from small glands in the walls.

**6. Ways of restraining animals animals (3x ½ = 1 ½ marks)**

Ropes,

Halters,

Lead stick and bull rings

Head yoke

Crush

7. **Function of walking area in zero grazing unit *(2x ½ =1mark)***

Dunging

Resting

Sunning

8**. Methods of selecting animals *(2x ½ =1mark)***

Mass selection

Contemporary comparison

Progeny testing

9**. Maintenance’s of a fish pond (4x ½ =2marks)**

Maintaining good level of water

Cleaning the pond to remove foreign particles and other organisms

Keeping off predators by fencing properly

Removal of unnecessary vegetation all weeding

Planting grass where necessary to prevent soil erosion

10**. Functions of feed additives (3x ½ = 3marks)**

Stimulate growth and production.

Improve feed efficiency.

Prevent disease causing organisms.

11. **Types of calf pens *(2x ½ =1mark)***

Raised permanent pens

Permanent calf pens with concrete floors

Mobile calf pens

12**. Reason for castrating male goats (4x ½ =2marks)**

To control breeding diseases.

To control breeding.

For faster growth rates.

Increase quality of meat by removing unpleasant smell especially in goats.

13**. Functions of a damp proof course ( 2x1= 1mark)**

Reduce termite attack

Prevent moisture rising up the wall

14**. Difference between mothering ability and prolificacy (1x1=1mark)**

**Mothering ability is** having good natural good instincts to the young ones while **prolificacy** is the ability of giving birth to many offspring’s at a time.

**15. routes in which pathogens gets into the body of livestock**

Through the

* Mouth
* Eyes
* Nose
* Genital openings
* Wounds (4x ½ =2mks)

16**. Factors determining quality of honey (4x ½ = 2marks)**

Type of plant from which nectar was obtained

Maturity stage of honey at time of harvest

Method of harvesting

Method of processing honey

***17. Advantages of artificial calf feeding* (4x ½ = 2marks)**

* Easy to keep accurate production record/milk yields of the cow.
* Possible to regulate the amount of milk given to the calf
* The cow does not need the presence of the calf in order to let down milk
* Easy to maintain high hygiene standards.

There is a likelihood of the farmer selling more milk

Many calves can be raised at the same time

Orphaned calves can be raised successfully

**18. Functions of lubrication system. (4x ½ = 2marks)**

* It helps to increase the efficiency of the machine and
* Reduces the rate of wear and tear of moving parts.
* It reduces the heat created by the rubbing surfaces and acts as a seal between them.
* It acts as a cleaning agent because it washes off all the dust, dirt, and soot and metal chippings from the oil paths to the sump.

19. **Factors to consider when grading eggs. (4x ½ =2marks)**

* **Size/weight of the egg** - large eggs fetch high prices than small ones. The average weight should be about 57gms.
* **Shape of the egg** - The normal egg shape is oval, with a broad end and a narrow end.
* **Cleanlines**s - Consumers prefer clean eggs.
* **Colours of the shell** - Brown eggs are popular with the consumers.
* **Candling qualities** - candling is done to determine freshness of the eggs and presence of any other egg abnormalities.

**Shell texture-** should be smooth and without cracks.

20. **Channels that beef farmers market their products (3x ½ =1 ½ marks)**

* Individual farmers through the local slaughter house.
* Livestock marketing division.
* Kenya Meat Commission.
* Farmer's Choice.

**SECTION B (20mks) answer all questions in this section**

21. a) disc plough **(1x ½ = ½ mark)**

b) C- beam ( **½ mark each)**

D- Concave disc

E- Top link attachment

c) Can be used in fields with obstacles because it roles over obstacles

It is not easily broken by obstacles because it rides over

It requires less power to pull when operating (**3x1= 3marks)**

22a) A- thermometer **(1mark each)**

B- Warm water

b) **Temperature** of between 37.5-39.4 degrees Celsius throughout to control the rate of embryonic development of the chick. High or low temperatures are lethal.

**Fresh air/ ventilation**- Good air circulation.

**Relative humidity** - Maintained at 60%.

High humidity leads to marshy chicks

low humidity the chick may stick to the shell.

**Egg turning** Done 3-4 times a day to facilitate uniform distribution of heat for uniform development of chick.

**Cleanliness** - cleaning and disinfecting the incubator with formaldehyde solution. **(State ½ , explain ½ )**

23a) artificial vagina **(1x1=1mark)**

**b)**  Warm water stimulates the penis to ejaculate/release semen **(1x1=1mark)**

**c)**

* A cow is restrained in a crush
* A bull is brought to the teaser cow when the bull mounts on the teaser cow a person grabs it and directs it into the artificial vagina
* Since the vagina contains warm water the bull is stimulated and it releases semen which is collected **(3x1=3marks)**

24a) tools **( 4x ½ =2marks)**

J- Watering can

K-Milk churn (rej milking churn)

L- Claw hammer

M-masons trowel

b) L- for storing of milk

For transporting milk

M- Laying on of mortar during **construction ( 2x1=2marks)**

c) Clean and disinfect after use

Store properly in a tool store (**2x ½ =1mark)**

**SECTION C ( answer any two questions)**

**25a) Importance of Fence in a Farm**

Keep out intruders to the farm,

Define the boundary lines of the farm.

Paddocking of fields to make rotational grazing possible.

Live fences serve as windbreaks.

Fences are used in mixed farming to protect crops from. Damage by livestock.

Fences add aesthetic values to the farm.

It is easy to control breeding.

It is easy to isolate sick animals from the rest of the herd. (**9x1=9marks)**

**b) Reasons for Maintenance of tools**

* To increase durability.
* To increase efficiency.
* Reduce costs of replacement.
* For safety of the user/avoid accidents.
* Avoid damage to the tool **(5x1=5marks)**

25 c) **The effects of parasite on the host animal are:**

* Depriving the host of its food.
* Sucking blood.
* Damaging the organs of the host.
* Cause irritation on the skin of the host.
* Destruction of hides and skins.
* Transmission of diseases.
* Cause obstruction in body passages. ( **6x1=6marks\_)**

26a)Causes of Cannibalism

• Overcrowding in the house.

• High temperatures in the poultry house making the birds uncomfortable.

• Too bright light.

• External parasite infestation.

• Inadequate and incorrect feeding.

• Idleness of the birds.

• Greediness of the birds.

• Disturbances of the pecking order

• Prolapses of the rectum which occurs once in a while.

• Bright light in the lying boxes. (6x1= 6mks)

***26 b) General Methods of Disease Control***

* Quarantine.
* Vaccination.
* Control of vectors by use of acaricides and rotational grazing.
* Disinfecting the equipment and buildings.
* Use of preventive drugs.
* Proper feeding of livestock.
* Culling of the animals which are carriers/slaughtering the affected animals.
* Use of artificial insemination to control breeding diseases.
* Proper selection and breeding of animals.
* Proper housing and hygiene,
* Isolating sick animals. ( **10x1=10 marks)**

***26c) The following factors are essential for clean milk production:***

* A healthy lactating cow.
* A healthy and clean milker.
* Clean and properly constructed milking parlour.
* Clean and disinfected milking equipment.
* Proper handling of the milk after milking. **( 4x1=4marks)**

***27a)New Castle***

* *Cause:* Virus. (**1x1=1mark)**

***Symptoms***

* Difficulties in breathing.
* Beaks remain wide open and necks are strained.
* Birds become dull.
* The birds stand with eyes closed all the time.
* Anorexia/loss of appetite.
* Nasal discharges which force the birds to shake their heads to clear it.
* Birds walk with a staggering motion.
* Paralysis of wings and legs may occur.
* Birds have their beaks and wings down.
* Birds produce watery greenish diarrhea.
* Birds lay soft shelled eggs**. ( 6x1=6marks)**

***Control***

* Killing all birds and burning them followed by cleaning and disinfecting the houses before bringing in new stock.
* Vaccination should be done during the first 6 weeks and then 2-3 months later.
* Quarantine **( 3x1=3marks)**

**b) Activities that take place in the Rumen-**

* Breakdown of food by micro-organisms and also stores food.
* Synthesis of vitamin B-complex.
* Synthesis of amino acids from ammonia gas.
* Proteins are broken to peptides and amino acids.
* Carbohydrates are broken to volatile fatty acids. **( 5x1=5marks)**

***c) Characteristics of Dairy Cattle***

* Wedge or triangular in shape.
* Large stomach.
* Docile with mild temperament.
* Large, well suspended udders and teats.
* Lean bodies.
* Lean and smooth neck.
* Large and long mammary milk wells and veins.
* Cylindrical; uniform and well-spaced teats.
* Wide and well set hindquarters to accommodate the udder. **(5x1=5marks)**