**Term 1 – 2023-OPENER EXAM**

**AGRICULTURE (443/2)**

**PAPER 2**

**FORM FOUR (4)**

**TIME: 2 HOURS**

**MARKING SCHEME**

1. Give two benefits of providing enough nutrients to livestock for proper health. [1 mark]
2. To avoid deficiency disease
3. Make the animal robust/strong enough to be able to resist diseases attack.

(2x1/2 =1 mark)

1. Give two harmful effects of ticks in sheep. [2 marks]
2. Cause irritation
3. Damage the wool (due to scratching/lower quality of wool
4. Cause retarded growth
5. Cause anemia
6. Bites and injuring the skin/create wounds

(2x1/2=1 mark)

1. State four roles of worker bees in a colony. [2 marks]
2. Rear and nurse the brood
3. Collect nectar to make honey
4. Make honey combs
5. Ventilate the hive
6. Protect the colony
7. Clean the hive

(4x1/2 = 2marks)

1. State the role of the crop in digestive system of a hen. [2 marks]
2. Softening/moisturizing food
3. Temporary food storage

(2x1=2marks)

1. State four reasons or castration in pig production. [2 marks]
2. Prevent uncontrolled mating/inbreeding
3. Improve the quality of meat
4. Promote faster growth
5. Make them docile
6. Control breeding diseases

(4x1/2=2 marks)

6. State two benefits of guard rails to piglets a farrowing pen? [1 mark]

1. Prevents sow from crushing piglets
2. Prevents sow from eating creep feeds

(2x1/2 = 1mk)

1. State the role of a foot bath in a cattle Dip. (1 mark)
2. Clean the feet of animals
3. Control foot rot
4. x ½ =1mark)

8. Distinguish between the following practices as used in livestock production.

(a). Crutching is ringing in sheep production. (2 marks)

1. Crutching in cutting of wool around the external reproductive organs of a female sheep to facilitate mating.
2. Ringing is the cutting of wool around the sheath of the penis in rams to facilitate mating.

(Marks a whole) (2 marks)

(b). Cropping and harvesting in fish farming. (2 marks)

1. cropping is the selective removal of fish of marketable size from the pond and harvesting is the removal of all the fish from the pond

(Mark as a whole (2 mark)

1. Give **four** disadvantages of inbreeding. (2mks)

* increase in pre-natal mortality rate
* reduces fertility
* reduces productivity
* loss of vigour

1. Give **four** factors that a farmer may consider while carrying out culling in livestock production.(2mks)

* old age
* hysical defects
* reduced production
* susceptibility to diseases
* infertility
* poor mothering ability

1. State **four** predisposing factors of pneumonia in lambs (2mks)

* overcrowding
* poor ventilation
* low level of hygiene
* age/young animals are vulnerable
* draught

1. Name **four** tools used in dehorning. (2mks)

* hot iron
* rubber ring with elastrator
* dehorning wire
* dehorning collodion

13 Ways in which infectious diseases can spread

- Through vectors

- Through ingestion of contaminated food and water/through food and water

- Through contact

- Through inhalation of contaminated air/through air. (3 x 1/2 = 11/2 marks)

14. Reasons for castration

- Prevent uncontrolled mating.

- Improve the quality of meat

- Promote faster growth/facilitate weigh gain

- Make then docile

- Control breeding diseases

- Control inbreeding (4 x 1/2 = 2 marks)

15. Characteristics of roughages

- Bulky

- High fibre content

- Low nutrient content

- Low digestibility

(4 x 1/2 = 2 marks)

16. Roles of worker bees .

- Kills the drones after mating the queen

- Scouting for a new home

- collect nectar/water/gum/propolis/pollen

- Make honey combs

- Protect the colony

- Clean the hive

- Make honey and bees wax

- Seal the cracks and crevices.

**SECTION B**

17.(a).J-Rafters.

K-cross tie/tie beam.

L-purlins.

M-Gutters.

(b). -Receive/ hold the roofing material.

-Hold trusses in position.

(c). To collect rain water from the roof.

-To prevent rain water from splashing soil onto the walls by preventing direct impact

18 (a) E - crop **( 1mk)**

F – Caecum **(1mk)**

(b) Function of F. production of enzyme pepsin.

- Mixing food with pepsin**. 1x1 = 1 mk**

(c ) Adaptations of G

- Equiped with tough muscles on either sides that cause sliding movements that cause crushing or grinding of food particles.

- Presence of grit (sand) increase the grinding of food particles**. 2x1 - 2mks**

19.(a )A….stock and die (1mk)

B…..plumb bob (1mk)

(b) C…chops forage for livestock. (1mk)

D….cuts wool from a sheep’s body (1mk)

[c]Cleaning after use;

-sharpening the blades (1mk)

1. a) A – Seminal vesicles

B – Epididymis

C – Prostate gland

D – Sperm duct ( ½ x 4 = 2 mks)

b) B – Storage of sperms (1 x 1 = 1 mk)

C – Produces a neutral fluid that neutralizes acidity of urine in urethra (1 x 1 = 1 mk)

c.) Testes/Testicles/epididymis

**SECTION C**

**21. a) Describe contagious brucellosis under the following subheadings:**

**i) Causal organism (1mark)**

- Bacteria/ Brucella abortus/ Brucella spp

**ii) Transmission (1mark)**

- By taking raw infected milk

- By handling a foetus born of an infected animal

**iii) Symptoms (4mks)**

- Spontaneous abortion/ premature births

- Retained placenta/ after birth

- Infertility in females

- Low libido in males

- Orchitis in bulls/ inflamed testis

- Yellowish/ brown/ slimy discharge from vulva

**iv) Control measures (4mks)**

**b) State the function of any five parts of a zero grazing unit in dairy farming. (5mks)**

- Milking stall – restraining cows during milking

- Calf pen rearing calf up to weaning

- Sleeping cubicles – provide shelter and warmth

- Loafing area- dunging, feeding, exercise and sunning

- Feed and water troughs – feeding and watering the animals

- Feed preparation room – preparing food rations and chopping fodder

- Store – For keeping dairy equipment and feed

- Milk recording area – weighing and recording of milk

**c) Explain five factors that should be considered when choosing tools and equipment to use in the farm. (5mks)**

- Suitability – tools should be suitable for the task

- Availability – tools/ equipment should be available in the shops

- Cost – tools/ equipment should be affordable by the framer

- Cost of maintenance – should be easily and cheap to maintain

- Operation – should be easy to operate by the farmer

- Durability – should last long when acquired

1. **(a) State five functions of water in the body of an animal.** (5marks)

* It is a compound of body cells and many body fluids; e.g. blood;
* It is responsible for the transportation of nutrients from one part of the body to another;
* Makes cells turgid, maintaining the shape of the body cells.
* Used in biochemical reactions in the body e.g. digestion of food.
* Helps to regulate body temperature through sweating and evaporation.
* Helps in the excretion of waste products from the body,
* It forms part of animal products e.g. milk

**(b) Discuss five factors that affect digestibility of feed in livestock. (10marks)**

* + - * + Chemical composition of the feed
        + Farm in which the feed is offered to the animal
        + Species of the animal
        + Ratio of energy to protein.
        + Quantity of feed already present in digestive system of the animal

**(c)Give five reasons for keeping livestock healthy. (5marks)**

* + - * + Good health ensures a long productive life
        + Healthy animals give maximum production /high performances
        + Healthy animals grow fast and reach maturity early
        + Healthy animals produce quality products which fetch good prices
        + Healthy animals do not spread diseases
        + Healthy animals are not economical to keep / reduce production costs

1. **(a) State ten general characteristics of beef cattle. (10marks)**
   * Adapt well to a wide range of ecological conditions.
   * Feed requirement is low.
   * Water requirement is low
   * Can feed on a variety of vegetation.
   * Are heat tolerant.
   * Are resistant to parasites and diseases.
   * Can move long distances in search of water and pasture without lowering their performance.
   * They breed regularly.
   * Grow fast leading to early maturity.
   * Blocky in shape.
   * Short strong legs to support their heavy bodies.
   * Efficient converters of food into meat and fat.
   * Have deep well fleshed bodies.

**(b) Discuss five factors that determine the amount of maintenance ration and animal should be given. (10marks)**

* + Level of production - high producing animals/dairy cows require more food than low producers.
  + Body size/weight of the animal - the larger the body size the more the amount of food and vice versa.
  + Age of the animal - young animals require more food than mature animals for faster growth and development.
  + Animal activity/purpose of the animal - active animals require more food than inactive ones/level of production.
  + Environmental conditions - animals require more food in cold weather than in hot weather/ambient temperature;
  + Physiological condition of an animal - pregnant animals require high amount of food than other for foetal development/sick animals;