

Term 2 - 2024  
**AGRICULTURE**  
**(MARKING SCHEME PAPER II)**  
**FORM FOUR**  
**TIME:2 ½ HRS**

**SECTION A: (30 MARKS)**

Answer all questions in this section in the spaces provided.

1. **Name three meat breeds of sheep.** (3 x ½ marks)
  - Dorper.
  - Blackhead Persian.
  - Red Maasai Sheep.
2. **List two methods of identifying pigs.** (2 x ½)
  - Ear notching.
  - Ear tagging.
3. **Differentiate between oestrus cycle and heat period.** (mark as whole 1mark)  
 Oestrus cycle is the period between two successive heat periods in animals while heat period is the time When a female animal is ready to accept mating to take place.
4. **State three qualities of marketable eggs.** ((Any 3 x ½ )1½mks)
  - Smooth shell
  - Oval shape
  - Medium weight
  - Hard shell
  - Clean eggs
  - Free from cracks
5. **Name any four notifiable diseases in livestock.** (Any 4 x ½ ) (2mks)
  - New castle
  - Rinderpest
  - Anthrax
  - Gumboro
  - Foot and mouth.
6. **State four factors that affect maintenance ration required by an animal. ( 4 x ½ ) (2mks)**
  - Body size/weight of the animal
  - Age of the animal ie young animal require more than old animal.
  - Animal's activities.
  - Level of production where higher produces need more for maintenance their low produces.
7. **Give a reason why ruminant animals are able to digest grass. (1 mark)**
  - They have micro-organisms/bacteria in the rumen which help to breakdown cellulose.
8. **Give the difference in meaning of the following terms as used in livestock health.**
  - (a) **Quarantine and Isolation**

**Quarantine.**  
Laws by the government banning movement of livestock and their products into and out of an area during the period of an outbreak of a notifiable or highly contagious and infectious disease.

**Isolation.**  
Separating and confining a sick animal from the rest of the herd to prevent spread of a highly contagious disease

(Mark as a whole)

- (b) Zoonotic and notifiable diseases (1 mark)  
**Zoonotic** A disease that can be transmitted from livestock to humans and vice versa  
**Notifiable** - highly contagious and infectious disease whose outbreak should be reported to the authority.

(Mark as a whole)

**9. Give four reasons for feeding calves with colostrum. (4 x ½) (2 marks)**

- Highly digestible
- Highly nutritive
- Highly laxative/purgative cleans the system
- Contain antibodies

**10. Differentiate between cropping and harvesting in fish production. (1 mark)**

Cropping is the removal of fish of marketable size from the pond while harvesting is the removal of all the fish from the pond.

**11. State four major routes of administering vaccines in day old chicks. (4 x ½)**

- Nostrils
- Mouth
- Eyes
- Under the skin (sub cutaneous)

**12. Give two reasons for feeding bees (Any 2 x ½) (1mk)**

- When there are new colonies
- During drought conditions
- To encourage multiplication

**13. Name the vectors for each of the following livestock diseases. (2 marks)**

- a) East coast fever... Brown ear tick (*Rhipicephalus appendiculatus*)  
 b) Rift valley fever... Culex mosquito/Aedes mosquito  
 c) Trypanosomiasis... Tsetse fly  
 d) Nairobi sheep disease Brown ear tick (*Rhipicephalus appendiculatus*)

**14. (a) Name the tools used in (2 marks)**

- (i) Cutting curves on thin wood Coping saw  
 (ii) Measuring the inner diameter of a circular object/surface Inside calipers  
 (iii) Cutting thin sheets of metal Tinsnips  
 (iv) Tightening wires during fencing Wire strainer

**b) State two care and maintenance practices of masonry tools and equipment. (1 mark)**

- Tools should be cleaned after use (Any 2 x ½)
- Part like hack-saw blades should be replaced regularly
- Handles should be replaced when broken
- All moving parts like nuts and wheels should be lubricated regularly to reduce friction
- When cutting metal, a coolant oil should be used to increase grip

**15. State two ways in which proper feeding contributes to disease control in livestock. (2 x ½)**

- It helps in preventing nutritional deficiency diseases.
- It increases ability to resist diseases.

**16. Outline four factors which would be considered when culling layers.**

(Any 4 x ½) (2 marks)

- Poor layers/producers
- cannibals
- Old chicken
- Combs, wattles & vents become shriveled
- Having dull feathers
- Egg eaters
- Breast bones become hard
- Body and vent changes colour from white to yellow
- Width between pelvic bones becomes narrow 2-3 fingers can't fit in between

**17. a. What is parasitism?**

(½ mark)

An association between 2 organisms in which one is called a **parasite** derives all its nutrients from the other one a **host** without benefiting the host.

**b. Name one parasite of bees.**

(½ mark)

Ants, wax moth, Bee louse, Honey Badger

**c. Give any four harmful effects of lice on livestock.**

(Any 4 x ½) (2mks)

- Poor feeding leading to emaciation.
- Loss of production in bird.
- Cause irritation to the animal leading to animal rubbing itself against objects
- Anaemia in poultry
- Death due to heavy infestation.

**18. Name two methods used in ration computation.**

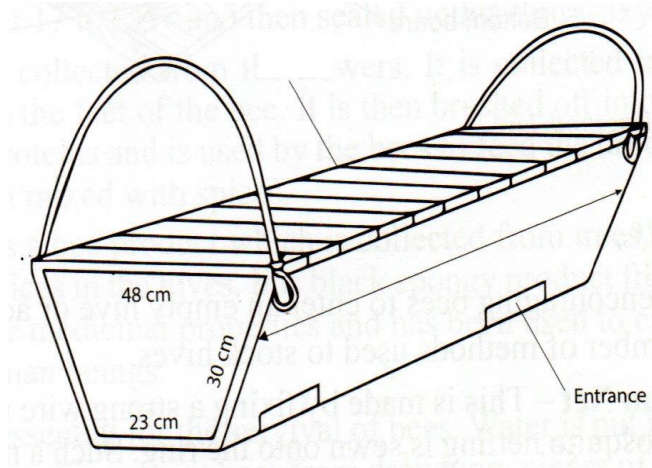
(Any 2 x ½) (1mark)

- Trial and error.
- Pearson's square method.
- Linear programming

**SECTION B: (20 MARKS)**

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

19. Below is a diagram of a bee hive.



**a) Identify the type of hive above. (1mk)**

Kenya Top bar hive.

**b) Give three advantages of using this type of hive on the farm. (3mks)**

- Honey combs can be removed without disturbing the brood.
- The top bar can be removed for inspection of the combs and replaced.
- High quality honey is as if is harvested without brood combs.
- It is easy to construct and repair.
- It is cheap to build and it does not require expensive equipment to extract honey.

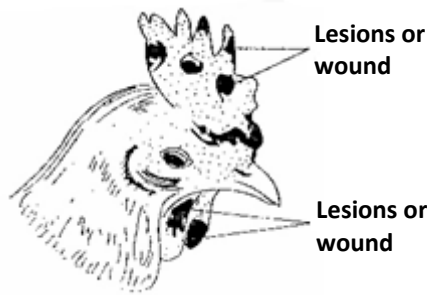
(3X1=3mks)

**c) State any three reasons why bees swarm. (3mks)**

- Shortage of food and water in the surrounding.
- Dampness and bad smell.
- Sick or infertile queen.
- Overcrowding in the hive.
- Damage of brood combs.
- Outbreak of diseases and parasites.

(3x1= 3mks)

20. The following diagram illustrate symptoms of a disease in poultry. Study it carefully and answer the question that follows.



- (a) Identify: (i) **the disease.** (½ mark)  
Fowl pox/Avian pox.
- (ii) **The causal organism.** (½ mark)  
Virus/Avian pox virus

(b) **State two other symptoms of the disease apart from lesion.** (2 marks)

- There is watery discharge through eyes and nose in early stage of infection.
- There is difficulty in breathing and swallowing.
- The bird is emaciated and this may cause death.
- Dullness.
- Loss of appetite.

(c) **State two control measures for the disease.** (2 marks)

- Isolation of the affected birds.
- Removal and killing of all affected birds.
- The remaining healthy birds should be vaccinated.
- Observe hygiene in poultry house.

21. (a) **Explain the reasons for the behavior of chicks in the above diagrams (4 marks)**

A—Correct temperature in the brooder.

B—Very cold brooder.

C—Very hot brooder.

D—Draught /cold wind from the right side of the brooder.

(4x1)= 4 marks)

(b) **Give two other signs the chick will show other than the ones you have given in( a) above.(1 mark)**

- Spread wings .
- Open beaks /panting/grasping.
- Drinking a lot of water.
- Making a lot of noise.

22. .a) **Name the tools.**

(2 marks)

**A** Open-end spanner

**B** Rig spanner

**C** Adjustable spanner

**W** Burdizzo

**b) State the functional differences between tools K and W. (1mark)**

K- Expands rubber ring to facilitate to facilitate closed castration, docking and dehorning

W- used for closed castration in bull calves, rams and Billy goats

**c).Advantage of tool C, over tool A and B**

- Tool C, can be used to open and tighten nuts and bolts of different sizes while A and B can only be used to open or tighten nuts and bolts of specific sizes.

**d) Common maintenance of tool C and W**

- Lubricating/oiling moving parts

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**SECTION C: (40 MARKS)**

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**Answer any two questions from the section.**

23. a) Describe trypanosomiasis disease under the following sub-headings.

**i) Causal organism**

(1 Mk)

Typanosoma (spp)/

**ii) Animals attacked**

- cattle
- Sheep
- Goats
- Pigs
- Horses

**iii) Symptoms of attacked animals**

(Any 5x1 ) (5 Mks)

- high temperature or fever
- The animal is observed to be dull
- Loss of appetite
- General weakness of the body
- Lachrimation which leads to blindness
- Diarrhea
- Rough coat sometimes no hair and cracked skin
- Swelling of parts of the belly
- Milk production decreases
- Loss of hair at tail and
- Anemia
- Abortion may occur in pregnant females due to high body

**iv. Control measures**

(3 Mks)

- Treating animals with trypanocidal drugs.
- Effective vector (Tsetse flies) control
- Confinement of wild animals in game parks.

**b) Describe five control measures for cannibalism in poultry**

(5 Mks)

- Control external parasites
- keep birds busy by hanging green leaves or vegetables in the house
- feed the birds on a balanced diet

- provide adequate floor space
- provide adequate laying nests
- provide dim lights in the brooder
- keep birds as per age group
- debeak hens which peck others

**(c) Explain the procedure in establishment of foundation in farm buildings (5mks)**

- Clear the vegetation
- Level the site if sloppy
- Measure the width of the foundation by pegging
- Dig to remove all the loose soil to the basement rock
- Place concrete of 1:2:4 or 1:3:6 at the flow
- Compact the concrete
- Lay the foundation stones and construct up to 15cm above the ground (5 mks)

**24. a) Functions of parts of a plunge dip**

- Holding yard – Holds animals before dipping
  - has concrete floor to remove mud from hooves
- Footbath - removes mud from hooves
  - controls foot rot
- Jump – Allows animals to jump into the dip one at a time
  - Forces the animal to slide and Plunge into the dip wash
- Dip tank - immersion of animals in dip wash containing an acaricide
- Exit steps – Allows animals to come out of the dip wash slowly
- Draining race – Allows the dip wash to drip from the animals and flow back to the dip tank
- Drying yard – Temporarily retains the animal thus avoiding pasture contamination and allows animals to be released at the same time
- Silt trap outlet – Traps mud/dung/silt from the dip wash before it flows back into the dip tank
- Water tank – storing water for dipping purposes/cleaning the dip and preparing fresh acaricide solution.
  - Shelter/Roof – Reduce the loss of acaricide/dip wash through evaporation and to avoid dilution of dip wash by rain water. Collects rain water into the water tank.
  - Waste pit- Damping site for sediments from the dip tank.

**b)- signs of parturition in cattle**

- Restlessness
- Enlarged /swollen vulva
- clear mucus discharge from vulva
- Full and distended udder
- Slackening of the pelvic muscles/relaxing of the hips muscles
- Thick milky fluid (colostrum) from teats
- Appearing and bursting of the water bag/sac
- Loss of appetite
- Isolating from others

(5x1)

**c) Maintenance practices of a fish pond**

- Clearing the bush/vegetation around the pond
- Cleaning the pond
- Desilting/removing the silt
- Planting grass on the dyke



- Repairing worn out parts/dykes
- Maintain the water level.
- Fertilize the pond
- Fencing

(5x1)

**d) Factors considered when selecting livestock for breeding**

- Age – select young animals
- Level of performance – select animals with the highest production level/high Performers or yielders.
- Physical fitness – animals selected should be free from physical deformities/defects e.g limping, mono-eyed
  - Health – Select healthy animals/animal selected should be health
  - Body conformation – Animals selected should have proper body conformation eg dairy cow to be wedge shaped with a large udder.
  - Temperament/behavior – select animals with good temperament/behavior
  - Quality of products – select animals that give good quality products
  - Mothering ability – animals selected should have good mothering ability
  - Adaptability – animals selected should be well adapted to local conditions.
  - Prolificacy – selected animals that are highly prolific
  - Fertility – selected animals that are fertile

25.

**a. Describe the management of a sow during parturition. (10 marks)**

- Deworm 7-10 days before parturition/spray the sow against external parasites/wash its body with soap and water.
- Take the sow to the farrowing pen at least 5-7 days before the expected date of parturition.
- Clean and disinfect the farrowing pen
- Provide creep area.
- Feed the sow entirely on bran.
- Provide clean bedding materials in the farrowing pen.
- Do not interfere but watch from a distance during farrowing.
- Assist where necessary.
- Ensure piglets are breathing.
- Perform artificial respiration.
- Ensure piglets are safe from being cannibalized by the sow.
- Tie, cut and disinfect the navel cord of the piglet.
- Weigh each piglet and record the birth weight.
- Remove and dispose off the after birth/any piglet born dead (still births).
- Put piglets in a warm place.
- Ensure piglets suckle colostrum.
- Get rid of excess piglets.
- Provide plenty of clean water after parturition.
- Feed the sow generously.

(Any 10 x 1 = 10 marks)

**b. Describe the lifecycle of a three host tick.**

**(7 marks)**

- Adult tick lay eggs on the ground.
- Eggs hatch into larvae on the ground.
- Larvae mount onto the first host.
- Larvae on host one feed to full engorgement and drop down
- Nymphs mount second host suck blood until engorges.

- Nymphs drop down.
  - Nymphs moults into adults.
  - Adults mount third host, suck blood to full engorgement.
  - Adults drop down to repeat cycle.
- marks)

(1 x 7 = 7

**c. Outline three effects of endo-parasites to the host animals (3mks)**

They suck blood leading to anaemia

They deprives the host of its food

They damage internal organs like liver

Cause obstruction of bile duct and alimentary canal

