AGRICULTURE
FORM 4- PP2
MARKING SCHEME

1. Name **four** dairy cattle breeds reared goats in Kenya.
   - Ayrshire
   - Friesian
   - Guernsey
   - Jersey (4x ½ =2mks)
2. Give **four** reasons for castrating male goats.
   - To improve meat quality
   - Quicken growth rate
   - Reduce aggressiveness
   - Control breeding (4x ½ =2mks)
3. Give **two** parasites of cattle which are also disease vectors
   - Ticks
   - Tsetse flies
   - Mosquitoes (2x ½ =1mk)
4. List **two** possible causes of over heating in a tractor engine
   - Slack fan belt
   - Low oil level
   - Low water level in radiator (2x ½ =1mk)
5. Mention the **use** of the following tools.
   - **Dibber**.-making holes for transplanting
   - **Spoke shaves**.-planning curved surface
   - **Tin snip**.-cutting metal/iron sheets
   - **Burdizzo** -castration (4x ½ =2mks)
6. State the importance of the following in livestock nutrition.

   i) **Water** (1mrk)
   - Transport medium
   - For metabolic processes
   - Regulates body temperature
   - Maintains shell shape
   - Component of livestock product
   - Lubricant of body joints (2x ½ = 1mk)

   ii) **Vitamin A** (1mrk)
   - Bone formation
   - Prevents diseases / Increases disease resistance
   - Improves vision
   - Improves vigour/ for proper growth. (2x ½ =1mk)
7. State **four** management practices that should be carried on a fish pond in order to obtain maximum fish production.(2mrk)
   - Control predators.
   - Control Water pollution.
   - Maintain appropriate water level.
   - Maintain correct stocking rate.
   - Supply adequate food. (4x ½ =2mks
8. a) State **two** reasons for washing the udder of a cow with warm water before milking.(1mk)
   - Remove dirt.

- Stimulate milk letdown (2x ½ =1mk)

b) Name the hormone that causes each of the following in dairy cows.

i) Milk letdown – oxytocin

ii) Lacto genesis – Prolactin (2x ½ = 1mk)

9. Differentiate between **breed** of animal and **type** of animal. (2mk)
   - **Breed**-group of animals with similar characteristics and common origin.
   - **Type** –the purpose for which the animal is kept. (2x1mk = 2mks) (mark as whole)
10. Name **two** livestock diseases that are spread through natural mating. (1mk)
    - Vaginitis.
    - Brucellosis.
    - Trichomoniasis.
    - Leptospirosis. (2x ½ = 1mk)
11. Name the **compartment** of the ruminant stomach where microbial digestion takes place. (1mk)
    - Rumen. (1x1 =1mk)
12. List **four** precautions that should be taken when using workshop tools and equipment. (2mk)
    - Use tools for correct purpose.
    - Maintain them in good working conditions.
    - Keep them safely after use.
    - Handle tools correctly during use.
    - Use of safety devices / protective clothes. (4x ½ = 2mks)
13. State **four** methods of increasing the depth of penetration of a disc harrow (2mk)
    - Exert more hydraulic force.
    - Use fewer discs.
    - Increase space between discs.
    - Add weights.
    - Increase cutting angle of discs. (4x ½ = 2mks)
14. List **four** factors considered when formulating livestock ration. (2mk)
    - Body weight / size
    - Available feeds
    - Cost of feeds
    - Nutrient composition of feeds available.
    - Ingredients required in the ratio.
    - Animals level of production.
    - Age / stage of growth.
    - Type of production. (4x ½ = 2mks)
15. State **four** conditions that necessitate the handling of farm animals. (2mk)
    - During treatment
    - When spraying or hand dressing
    - When milking
    - When performing some management practices e.g. dehorning
    - When inspecting animals for any signs of a disease. (4x ½ = 2mks)
16. State **four** abnormalities of eggs that can be detected during egg candling. (2mk)
    - Absence of yolk.
    - Double / triple yolk.
    - Air space in wrong position.
    - Excessively large air space.
    - Cracks on egg shell.
    - Blood / meat spots.

- Deformed / broken yolk.

17. List **two** events occur during induction stroke in a four stroke engine. (1mk)
    - Piston moves down from TDC
    - Exhaust valve is closed
    - Inlet valve is open
    - Air / fuel mixture get into combustion chamber
    - Piston reaches BDC. (4x ½ = 2mks)

SECTION B (20MARKS)

Answer <u>all</u> questions in this section

18.**i)** a) Name the implement.(1mk)
- Spike tooth harrow (1x1 =1 m k)

b) Give **two** uses of the implement above.(2mks)
- Level seed bed
- Break soil clods
- Stir soil
- Destroy weeds
- Incorporate fertilizer in the soil
- Removing trash from the field. (2x1 = 2)

c) State **three** maintenance practices carried out on the above implement.(3mk)
- Replace worn out parts
- Clean after work
- Tighten loose bolts and nuts
- Oil unpainted parts for storage. (3x1 = 3mks)

ii) a) Identify the farm equipment illustrated above
- Bucket pump /stir - up pump (1x1 = 1mk)

b) What is the use of the equipment?
- Spraying acaricide on livestock (1x1 =1mk)

c) Name the parts labeled W, X and Y(3mks)
- **W -** Nozzle
- **X -** Trigger
- **Y -** Pail /bucket

d)What is the functions of **Y** on the equipment (1mk)
- For holding acaricide solution during spraying. (1x1 = 1)

19. i) Identify the above diagram (1mk)
- Artificial vagina.

ii) Name the parts labeled **A** and **B** (2mks)
- **A –** warm water
- **B –** collecting cap

20.i) A ration containing 18% protein is to be made from maize and sunflower cake. Given that maize contains 7% protein, and sunflower seed cake 34% protein. Use Pearson square methods to calculate the value of feedstuffs to be used to prepare 100kgs of the feed (3mks)

ii) Apart from Pearson square method, name **two** other methods that can be used to formulate feed ration (2mks)

- Linear programming
- Trial and error
- Graphical method. (2x1 = 2mks)

SECTION C (40MARKS)

Answer any <u>two</u> questions in this section

21.a)Name **four** notifiable diseases in livestock (4mks)

- Lumpy skin disease
- Newcastle
- Anthrax
- African swine fever
- Rinderpest
- Rabbies (4x1 = 4 mks)

b) Discuss **four** ways in which livestock disease are spread in the farm (4mks)

- Ingestion of contaminated feed and water.
- By carrying agents /vectors
- Through wounds
- Through inhalation of pathogens
- By abrasion in the body
- Through contact with the disease causing organisms. (4x1 = 4mks)

c) Describe the methods of controlling livestock disease giving an example of different disease in each case (12mks)

- Use of prophylactic drugs e.g. coccidiostat to control coccidiosis
- Use of antiseptics / disinfectants to maintain farm hygiene to control calf scours
- Quarantine to control foot and mouth disease
- Isolation to control infectious diseases e.g. foul pox
- Mass slaughter to control zoonotic diseases e.g. anthrax
- Vaccination to control black quarter
- Control vectors like tsetse flies to control nagana.
- Use of healthy breeding stock / to prevent breeding diseases
- Proper nutrition to control bloat and milk fever.
- Treat sick animals to prevent spread e.g. mastitis
- Drenching /control of internal parasites like fascioliasis , ascariasis
- Keep resistant breeds e.g. zebu to control ECF
- Foot trimming to reduce occurrence of foot rot
- Proper housing to control pneumonia. (12x1 =12mks)

22. Describe the management of day old chicks in a deep litter system from preparation of brooder up to eight (8)weeks old (10mks)

- ensure brooder is working well 2-3days before arrival of chicks
- provide brooded with litter for warmth and moisture absorption
- provide heat source
- put wire gauze around the heat source

- make holes on the brooder to provide fresh air
- provide dim light to prevent cannibalism
- cover litter with polythene sheet or newspaper and place feeds on them to discourage chicks from eating litter
- check the temperature at above 15cm above the floor to ensure that the temperature is appropriate
- from 4th -6th week withdraw the heat source gradually
- feed chicks on chicks mash
- provide plenty of clean water
- vaccinate against Newcastle disease after 2-3 weeks
- keep proper records
- dust birds with insecticide to control external parasites
- at 6 weeks introduce growers mash
- isolate sick birds from healthy ewes
- remove and treat sick birds
- clean and disinfect the house
- provide greens
- remove dead chicks from the house
- provide foot bath with disinfectants (20 x1/2 mks =10mks)

(b) Describe coccidiosis disease under the following sub- headings.

(i) Animals attacked (2mks)
- *Calves, poultry, lambs and young rabbits.*

(ii) Causal organism (1mk)
- *Coccidia of the Eimeria spp*

(iii) Symptoms (4mks)
- *-Diarrhoea which may be whitish.*
- *-Dysentery or blood in the dung.*
- *-Birds have ruffled feathers, dull with drooping wings.*
- *-Animals become emaciated*
- *-Sudden death in birds, rabbits and kids.*

(iv) Control measures (3mks)
- *-Use of coccidiostats.*
- *-Observing hygiene.*
- *-Isolation in cattle.*
- *-overcrowding in a poultry house should be avoided.*

23. a) explain the factors that influence the power output of farm animals (8mks)
- Training
- Level of nutrition
- Harnessing animals properly
- Body weight
- Age-mature ones produce more power than young
- Handling of animals

(1 mark for each of 4 points and a mark for explanation total=8mks)

b) State the importance of farm fences (12mks)

- demarcates farm land from that of neighbours
- keeps wild animals and other intruders from entering the farm
- separates crop field from pastures facilitating mixed cropping
- used to divide pastures into paddocks facilitating controlled grazing
- controls movement of animals and people preventing formation of unnecessary paths in the farm
- helps control spread of diseases and parasites in the farm by keeping wild animals away
- helps isolate sick animals from the rest of the herd preventing the spread of diseases
- enables farmer to control breeding rearing different animals in different paddocks
- provide security to the homestead
- they have aesthetic value
- live fences act as animal feeds
- live fences act as wind breakers (1x12=12mks)