**3 KNT FRATERNITY EXAMINATION**

 **AGRICULTURE PAPER 2(443/2) MARKING SCHEME**

**SECTION A (30 MKS)**

**1. Write 2 tools appropriate for cutting mature horns in a bull. (1mk)**

- dehorning wire

- dehorning saw

**2. Give 3 methods used in selection of a breeding stock. (1 ½ mks)**

- Mass selection

- Progeny testing

- Contemporary comparison

**3. Write 2 factors that inhibit milk let down process in dairy cattle. (1mk)**

- Unfamiliar noises / strangers during milking.

-Beating up the cow at milking parlor.

- Taking more that 8-10 minutes to milk.

**4. Give 4 major routes of administering vaccine in a day old chick. (2mks)**

- Through nostrils.

- Through the mouth.

- Through the eyes.

- Trough the skin.

**5. Give 4 general characteristics of a dairy cattle. (2mks)**

-They have lean bodies / less flesh bodies.

- Are wedge/ triangular-shaped due to their large hind quarters.

- Have a large and well developed udder.

- Have large and prominent milk veins.

**6. Name 3 examples of temperate dairy goats. (1 ½ mks)**

-Saanen.

-Toggenburg.

-AngloNubian.

**7. State any 4 pre-disposing factors to livestock diseases. (2mks)**

-Animal species.

-Breed of the animal.

-Sex

-Age

-Colour.

**8. Name 4 larval stages of a liver fluke. (2mks)**

-Miracidium.

-Sporocyste.

-Cercariae.

-Metacercaiae.

**9. Give 3 ways in which infectious diseases ca be spread from one livestock to another within the farm. (1 ½ mks)**

-Through vectors.

-Through contacts.

-Through inhalation of contaminant.

-Through ingestion of contaminated food and water.

**10. Give 3 diseases in poultry that are caused by virus. (1 ½ mks)**

-Gumboro disease.

-Newcastle.

-Fowl pox.

**11. State 4 factors at influence the dairy water intake in an animal. (2mks)**

-Ambient temperature.

-Moisture content of the feed eaten.

-Body size of the animal.

- Level of production.

-Work done by the animal.

**12. State 4 importance of flushing in animals. (2mks)**

-Increases chances of twining.

-Increases chances of conception.

-Increases chances of implantation.

-It ensures healthy young ones.

**13. State 4 disadvantages of a hedge fence. (2mks)**

-Takes long to establish.

-Occupies lot of land.

-Can be a hiding place for thieves, predators.

-Requires regular trimming.

-Competes with crop plants.

-Can cause injury to human beings, livestock.

- Can be destroyed by pests.

**14. Write 4 construction features necessary in a fish pond. (2mks)**

-A outlet to drain off excess water.

-An inlet for fresh water supply.

-A spillway channel to take away excess water.

-A screen to prevent escape of fish / entry of star fish.

-A fence to keep off predators/unauthorized person.

-A dyke/ dam wall.

**15. Name 4 structures which are used in the control of livestock parasites on a fam. (2mks)**

-Dips

-Crush

-Spray race

-Fences

**16. Name 2 types of tractor engine cooling system. (1mk)**

-Oil cooling system

-Air cooling system

**17. State 4 reasons why piglets should be weighed immediately after birth and weaning. (2mks)**

-For selection purposes

-To know weight gain.

-To determine the genetic potential of the sow during gestation period.

-To determine the sow’s mothering ability.

**18. Name 2 notifiable diseases in cattle. (1mk)**

-Foot and mouth disease.

-New castle.

-Anthrax

-Contagious abortion.

-Rinderpest.

**SECTION B (20MKS)**

**19. a) Explain the behavior of chicks in each case. (3mks)**

 A : chicks are crowding around the heat source because the temperatures are low.

B: Chicks have moved further away from the heat source because temperatures are very high.

C: Chicks move away / to one side because the temperatures on the other side of the brooder are unfavorable possibly due to the effect of draught.

**b) Explain why the brooder should be round. (1mk)**

-To avoid overcrowding at one point this may lead to suffocation.

**c) The behavior of the chicks if the temperature in the brooder is optimum. (1mk)**

**20. a)The type of fence. (1/2 mk)**

A bar bed wire fence.

 **b)Name the parts labeled A,B,D and E. (4mks)**

A : Strut

B: Strainer

D : Dropper

E: Standard post

**c)Give the function of part labeled D. (1/2 mk)**

prevent wires from sagging/ makes wires firm.

**21. a) Label the parts N and L. (2mks)**

N : Exhaust part

L: Connecting rod

**b) Name three farm machine where the above engine is used. (3mks)**

-Lawn mowers .

-Chain saws.

-Water pumps.

**22. a) Identify the type of identification illustrated above. (1mk)**

Ear notching

**b)Give the identification number of the animal illustrated in the diagram above. (1mk)**

-40

**c)Give any other 3 methods of identification. (3mks)**

-Ear tagging

-Neck strap/ chain

-Branding

-Tattooing

**SECTION C (40MKS)**

**23a) Describe the management practices that should be carried out on a sow during the furrowing. (12mks)**

-Clean and disinfect the furrowing pen.

-Wash /clean and disinfect the sow

-Control external parasites.

-Move sow to furrowing pen (3 days before furrowing)

-Provide clean bedding for the sow

-Provide bran to the sow after furrowing.

-Ensure piglets are suckling.

-Weigh the piglets.

-Dispose after birth.

-Dispose off born still piglets.

 **b) Explain 5 reasons why a breeding boar may be culled. (5mks)**

-Old age – cull the old

-Health of boar – cull frequently sick.

- Injury – Cull seriously injured and unable to mate.

- Inbreeding – cull when daughters are used as replacement stock.

- Size – cull when too heavy to ate.

- Fertility – cull the infertile boars.

 **c) State 3 maintenance practices of fork jembe. (3mks)**

-Clean after use.

-Straighten bent pongs.

-Tighten loose handle.

-Replace broken handle.

24a) Discuss Gumboro disease under the following sub headings.

**i)Animal affected (1mk)**

- chicken , turkeys , pigeons , ducks

**ii) Causal organism (1mk)**

* Virus (birna virus)

**iii) Symptoms (6mks)**

* Gland above the vent becomes swollen.
* Decrease in egg production.
* Birds develop respiratory problems.
* Loss of appetite.
* Affected birds show low water intake.
* High mortality rate due to hot weather.

**iv)Control measures (2mks)**

* Vaccination of birds
* Use vitamin B 12 for manufacture of blood.

**b) Explain 5 essentials of clean milk production . (10mks)**

* Clean and healthy milk man.
* Clean milking utensils.
* Clean milking cows.
* Clean milking parlour.
* Avoid flavor in milk.
* Filtration of mik/ cool it before storage.
* Healthy milking herd.

**25a) Describe life –cycle of two –host tick. (7mks)**

* Eggs on the ground hatch into larvae.
* Larvae climb on the first host.
* Larvae feed on the blood at the first host and become engorged.
* Larvae moults into nymphs. Nymphs feed on the same host.
* An engorged nymph drops to the ground and moults into adult.
* The adult climbs on the second host where it feeds and mates.
* An engorged female drops to the ground to the eggs.
* Eggs on the ground develop to start a new cycle.

**b) Explain general measures used to control livestock diseases. (8mks)**

* Prophylactic approach: Animals are given drugs routinely to avoid infections.
* Vaccination: Vaccines provides immunity against certain diseases.
* Quarantine imposition
* Isolation
* Proper nutrition / feeding.
* Drenching / deworming.
* Treatment of sick animals.
* Control vectors.
* Proper hosing
* General farm hygiene.
* Mass slaughter / culling
* Proper selection and breeding.

**c) Write advantages of using a donkey for farm work. (5mks)**

* It’s a friendly animal which develops attachment to the owner or handler.
* It’s hardy and generally docile once trained.
* It’s relatively cheaper to buy rear and maintain.
* It’s patient when given the right amount of work.
* Can be handled by anybody even young.

**3KNT FRATERNITY EXAMINATION**

**AGRICULTURE PAPER 1 (443/1) MARKING SCHEME**

**SECTION A (30MKS)**

***ANSWER ALL THE QUESTIONS IN THIS SECTION***

**1.Differentiate between olericulture and pomoculture as used in crop production. (1mk)**

- Olericulture is the growing of vegetables while pomoculture is the growing of fruits.

**2. List 4 physical weathering agents in soil formation process. (2mks)**

-Wind

-Water

-Temperature changes

-Moving ice

**3. State 2 positive effects of wind on agriculture. (1mk)**

-Seed dispersal

-Act as agent of pollination.

**4. Give 4 methods of farming. (2mks)**

-Mixed farming.

-Nomadic pastoralism.

-Shifting cultivation.

-Organic farming.

-Agroforestry.

**5. State the importance of sub-soiling. (1mk)**

-Breaking hard pans in areas where they have formed after primary cultivation.

**6. State 3 benefits of minimum tillage. (1 ½ mks)**

-Reduce soil erosion.

-Conserve soil moisture.

-Cheap.

-Soil structure conserved.

**7. Name any 3 types of water pumps that can be used to lift water form its source for the farm. (1 ½ mks)**

-Hydram

-Centrifugal

-Piston

-Semi-rotary

**8. Give 4 factors considered when selecting irrigation method. (2mks)**

-Topography of the land

-Availability of water

-Skills of the farmer

-Type of crop to grow.

**9. Outline 3 indicators of a well rotten compost manure. (1 ½ mks)**

-Colour dark

-Should be odorless

-Light in weight

**10. Define the term opportunity cost. (1mk)**

Cost of best foregone alternative.

**11. Give 4 benefits of processing a land title deed to a farmer. (2mks)**

-Reduces land disputes

-Encourages long term investment

-Used as security for credit

-Motivates the farmer to conserve soil and water.

**12. Name 4 basis under which inorganic fertilizers are classified. (2mks)**

-Nutrient contained

-Mode of application

-Time of application

-Effect on the soil p/H

**13. State any 2 ways of breaking seed dormancy during the preparation of planting materials .(1mk)**

-Scarification

-Soaking in water

-Chemical treatment

-Hot water treatment

**14. Give 4 factors that increase seed rate. (2mks)**

-Low germination percentage

-Low seed purity

-Close spacing

-More seeds per hole

-Purpose of the crop

**15. Give 4 disadvantages of mulching in crop production. (2mks)**

-Build up pest and diseases in the soil.

-Discourages water infiltration in the soil especially inorganic mulches.

-Some are non-biogradable thus results to pollution of environment.

-Risk to fire incase of organic mulching.

**16. Early maturing varieties of cabbages. (2mks)**

-Gloria F1 Hybrid

- Mkuki

- Early Jersey

**17.Give 4 advantages of crop rotation. (2mks)**

-Improves soil structure

-Control soil borne peat and diseases

-Aids in weed control

-Improve soil erosion

**18. State 4 types micro catchment. (2mks)**

-Cross strip catchment

-Mound micro-catchment

-Runoff strip

-Contour bench terraces system

-Catchment basins

**19. classifying pests. (2mks)**

- Crop attacked

- Crop part attacked

- Mode of feeding

- Science of classification

**SECTION B : (20MKS)**

**20a)Identify the above weed. (1mk)**

Chinese lantern (Nicandra Physalodes)

**b)State 2 economic importance of the above weed. (2ks)**

lead to animal poisoning

-Increase cost of production to control

**c)Under which classification of plant morphology does the above weed belong? (1mk)**

broad – leaved weeds

**d)Give one mechanical weed control method that can be used to control the above weed. (1mk)**

-Tillage

- Uprooting

-Slashing

**21a)Identify the method illustrated. (1mk)**

Four – heap method

**b)Using arrows indicate the direction of the material movement. (1mk)**

 X I z

 FARM

c**)State 3 characteristics of crops used for making green manure. (3mks)**

- Hardy

- Fast growth rate

- High nitrogen rate

- Leafy / vegetative

**22. i) State the structure illustrated above. (1mk)**

Trench silo

**ii) State the form in which forage is preserved as illustrated above. (1mk)**

silage

**iii) Give the role of the following in the structure ` (2mks)**

**a)Polythene sheet**

Prevent rain water seepage/ prevent entry of oxygen / make silo air tight.

**b)Drainage**

drain away the rain water

**iv) Name one other method of forage preservation. (1mk)**

-Indore /pit method

**23. a)Identify the tomato disease and pest labeled C and D respectively. (1mk)**

C : blossom end rot

D: Nematode

**b)State two causes of the disease identified in 2a) above. (2mks)**

- lack of calcium in the soil

-Too little or no water.

**c)Give two control measures of pest identified in 23 a) above. (2mks)**

-Crop rotation

-Soil fumigation

**SECTION C (40MKS)**

**24a).Explain 5 cultural disease control measures in a field of crops. (10mks)**

* Field hygiene
* Planting resiatat varieties
* Timely harvesting
* Proper spacing
* Rogueig
* Use of clean planting materials
* Close season **5 well explained x 2**

**b)Explain 5 management practices carried out in a nursery bed. (10mks)**

* Mulching
* Pricking out
* Watering
* Weed control
* Pest and disease control
* Hadening off **5 well explained x 2**

**25a) Explain farming practices that help to conserve soil. (12mks)**

* Use of trash line / stone lines – trap soil and reduces the run off.
* Contour farming /ploughing
* Minimum tillage
* Mulching
* Terracing – reduces length of slope and speed of run off water.
* Strip cropping
* Cover cropping **6 well explained x 2**

 **b) Describe maize production under :**

**i) Seed bed preparation (4mks)**

* Prepare the seed bed early before onset of rains.
* Clear the land.
* Plough the land deeply to remove the perennial weeds.
* Harrow the land to obtain medium tilth.
* Carry out appropriate soil and water conservation measures .

**ii) Field practices (6mks)**

* Weed control
* Top dress with nitrogenous fertilizer at recommended arte
* Grappig
* Thinning
* Earthing up
* Pest control
* Disease control

**26a) Outline the role of phosphorous in plants. (5mks)**

* Root development
* Development of flowers
* Fruit and seed formation
* Hasten ripening of fruits
* Metabolic processes e.g respiration
* Strengthening plant stem

**b) Describe the policies used by he government to regulate the amount of imported agricultural goods in Kenya.(5mks)**

* Heavy taxation of imports in order to protect local industries.
* Subsiding the growing of locally produced commodities.
* Quality controlled to endure production of high quality goods for export and domestic markets.
* Conservation of natural resources eg fossils
* Stepping up to control diseases and parasites that affect crop and livestock

**c) Describe uses of farm records in the farm. (10mks)**

* Helps to compare performance of different enterprises within the farm.
* Show history of the farm.
* Guide farmer in planning and budgeting of farm operation.
* Help to detect lost or theft o the farm
* Determine value of the farm
* Make it easy to share profit and losses in the farm
* Helps in supporting insurance claims in the farm
* Provide labour information like terminal benefit.
* Helps in assessment of income tax to avoid over or under taxation.
* Helps in settling disputes in farm.