AGRICULTURE

FORM 4 PP2

END TERM 2 2021

MARKING SCHEME

SECTION A

1. State four advantages of using artificial incubation when hatching chicks 2mk)

* It has a high degree of hatchability.
* A farmer can plan when to incubate & hath chicks
* The incubator can be used throughout the year
* A large number of eggs can be hatched at the same time.
* The chicks are free from parasite & diseases infestation.

1. State four reasons why livestock should be weighed at weaning stage. 2mk)

* To determine the amount of food to give to the livestock
* To determine the dosage / quantity of drugs to give to the livestock
* To determine their growth rate
* For selection / culling purposes
* For proper record – keeping purpose

1. Outline four factors that affect the digestibility of a feed 2mk)

* Chemical composition of the feed
* Form in which the food is given to the animal
* Species of the animal
* The ratio of energy / carbohydrates to the proteins
* Feed mixtures & other ingredients in the feed
* Quantity of food already present in the digestive system.

1. A) Give three practices that can be carried out on wooden fences to make them durable. 1 ½)

* Application of wood preservatives such as creosote
* Charring the posts
* Cutting the top at a slope
* Covering the top of the post with metal or plastic
* Reinforcing of the posts with concrete

b) Outline three disadvantages of using hedges on the farm. 1 ½)

* They cause shading effects to crops
* They compete for growth factors with the crops
* They may harbour and transmit pests and transmit pests/vermin & diseases
* They require constant trimming, hence extra labour force
* Their roots may cause cracking of floors, foundations and walls of farm structures

1. List four safety precautions which should be considered when using farm tools 2mk)

* Tools should be used to perform the work they were designed for
* Tools should be maintained in good working conditions
* The user should be know how each tool is handled or used
* The user should wear the right protective clothing for the job
* The tools should be stored in safe places such as in tool racks or tool boxes.

1. Outline four factors that lower the quality of concrete. 2mk)

* Impurities / foreign material
* Inappropriate mixing ratio / wrong ratio
* Quick drying / premature drying
* Poor mixing
* Large sizes of individual aggregate

1. State four factors that would accelerate depreciation of farm machinery. 2mk)

* Wear and tear/ use
* Lack of maintenance
* Age of the equipment
* Obsolescence’s / change in technology

1. Give four products of microbial digestion in the rumen of cattle 2mk)

* Volatile fatty acids
* Microbial proteins
* Ammonia
* Vitamin B complex and vitamin k

1. State four factors a farmer should consider when selecting gilt for breeding. 2mk)

* Appropriate age of maturity and weight ie 6-12 months or 90-100kg live weight
* Good mothering ability
* Fast growth rate and early maturing
* Should be healthy
* Should be prolific
* Able to withstand the stresses of heat & services
* Good conformation. It should have along and deep body conformation/ well developed hams / legs well set apart / well arched topline.

1. Name the breeding system involved in each of the following cases.
2. A Friesian sire from Kenya mated with a Friesian dam from Holland. 1mk)

* Out breeding or out crossing

1. A Zebu sire (father) mated with a Zebu daughter. 1mk)

* Inbreeding

1. Give the functions of the following hormones in livestock.
2. Oxytocin 1mk)

* It stimulates milk let down

1. Stilbesterol 1mk)

* It stimulates fattening

1. State four advantages of a spray race over a plunge dip. 2mk)

* A spray race is suitable for spraying pregnant and sick animals
* The animals do not swallow the acaricides
* Less labour is required
* Spraying Is fast

1. The dressed weight of a beef animal is 450kg and its kill out percentage is 75. Calculate its live weight. 2mk)

Kill out % = Dressed weight X 100

Live Weight

Let the live weight be X

* 75 = 450 Kg X 100

X

X = 450 X 100

75

= 6000Kg

1. Give the meaning of the following terms as used in livestock management. 11/2mk)
2. Bullock - A mature castrated male cattle
3. Pullet - A young female bird from 8 wks to the point of laying
4. Sow - A mature female pig after first parturition
5. State three reasons why steaming up is done in dairy cattle. 1 1/2mk)

* To ensure birth of healthy vigorous calves
* To promote good health of the mother
* It helps the cow to build energy reserves needed during calving
* It stimulates development of mammary glands in order to increase milk yields after calving

**SECTION B**

1. Identify the parts labeled P,Q , R, S and T. 2MK)

* P - Reflector
* Q – plywood / card board wall
* R – waterer / water trough
* S – Feeder / Feed trough
* T – lantern / Electric bulb

1. What is the purpose of the part labeled Q . 1mk)

* To confine chicks within the heat source
* To conserve / maintain heat within the brooder

1. State two ways by which temperature in the brooder may be raised. 1mk)

* By raising the wick of the lantern lamp or using a bulb with higher watts
* By adding another lantern in the brooder or adding more bulbs
* By lowering the reflector.

1. Name any material that would be suitable for use as litter in the brooder. (1/2 mk)

* Sawdust
* Wood shavings
* Dry chopped grass / coffee husks
* Cereal husks

1. Identify the parasite 1mk)

* Liverfluke (Fascioia SPP)

1. Name the species of livestock commonly attacked by the parasite. 1mk)

* Cattle
* Sheep

1. In which organ in the parasite found. 1mk)

* Liver

1. Give four symptoms of attack in livestock by the above parasite. 2mk)

* General amaciation / loss of weight in affected animals
* Anaemia
* Damage to the liver / Haemorrhage
* Dullness and depression
* Swollen & painful abdomen
* Indigestion
* Recumbency / inability to mkove befopre

18.

1. Identify the parts labelled L and M. 1mk)

* L – wire loop or hangers
* M – bee

1. State the functions of the parts labelled K, L and N 1 ½mk)

* L- wire loop or hangers
* M – Bee entrance / entrance
* N – providing site for attachment of combs on their underside

1. Name the tool used to detach honey combs from the hive during honey harvesting. 1/2mk)

* Hive tool

1. State two maintenance practices carried out on the hive. 1mk)

* Replace of worn - out parts
* Using wood preservatives on the outside of the hive to prevent rotting
* Ensure water does not enter the hive by sealing of any leaks

1. How can Bees be made to colonize a new hive? 1mk)

* By attracting the bees through applying bees wax/ honey /molasses / sheep sorrel on the side or an top of the hive
* Placing a container of sugar syrup on top.

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1. Name the parts labelled W, X, Y and Z. 2MK)
   * + Alveoli
     + Gland cistern
     + Teat canal / orifice
2. What is milk let down? 1mk)

* It is the flow of milk from the upper region of the udder/alveolar region to the gland and teat cisterns

1. Name two hormones that control milk let down in a dairy cow. 1mk)

* Oxytocin
* Adrenalin

1. What is dry cow therapy? 1mk)

* It refers to injecting a cow with appropriate antibiotics through the teat canal when it is being dried off to protect the cow from mastitis infection.

SECTION C

1. Described the use of the various tools required in the construction of a rabbit hutch. 10mk)

* Claw hammer: used for driving nails into wood and removing nails from the wood.
* Tinsnips: it is used for cutting wires
* Plier: it is used for cutting wires
* Mallet: used for hitting the chisel when making grooves in wood
* Wood chisel: it is used for cutting grooves in wood
* Jackplane: it is used for smoothening the wood
* Tape measure / rule: used for measuring the length of materials to be used.
* Marking gauge: used for marking lines on wood
* Spirit level: it is used to determine vertical / horizontal straightness
* Try square; it is used to measure or determine right angles
* Screw driver: for driving screws into wood or removing screws from wood
* Scriber: for making lines on metal sheets

b) Describe the advantages of battery cage system of rearing layers. 10mk)

* It is easy to keep individual bird production records
* It controls cannibalism and egg eating contamination of water and feed is minimized
* The birds are not exposed to predators , parasites and diseases
* It facilitates culling and handling of birds
* It is easy to collect eggs
* Egg loses are reduced
* Many birds can be kept in a given area
* It eliminates broodiness
* It can keep the eggs clean
* There is low labour requirement
* Higher egg production due to less energy use

a) Outline the methods used to control internal parasites in livestock. 7mk)

* Regular drenching/deworming/dosing using prophylactic drugs or anthelmintic drugs
* Proper sanitation in livestock houses/providing the animal with proper feeds and water to avoid re – infection by liver flukes and round worms
* Proper disposal of of faeces by use of latrines
* Practicing rotational grazing
* Draining swampy areas or fencing them
* Burning infested pasture to kill the eggs
* Inspection & thorough cooking of meat
* Double fencing to keep other animal away
* Spraying swampy areas with appropriate chemicals eg copper (ii) sulphate (cuso4) to kill diseases vector.

b) Discuss contagious abortion (brucellosis) under the following sub headings

1. Animal species attacked. 2mk)

Animal species attacked :cattle sheep, goat and pigs.

1. Mode of trans mission 3mk)

* A.I using contaminated obstetrical equipment
* Vaginal through contaminated semen
* Coitus through contaminated with aborted material
* Ingestion contaminated milk by calf or an unclean milk person

1. Symptoms 4mk)

* Abortion / premature birth
* Yellow or brownish slimy colourless discharge through the vulva
* Retained after birth / placenta
* Loss of libido
* The cow may become barren while bulls become infertile

1. Control measures. 4mk)
   * + Though vaccination
     + By using healthy semen/bulbs/AI/cows
     + Culling carriers and affected cattled
     + Proper disposal of foetus and carcass
     + Testing the breeding cattle against the disease
     + Avoiding contamination of hands with aborted foetus
     + Observing strict hygiene on the farm.

A) Explain the process of egg formation in the reproductive system of poultry.

10 mk)

* **Ovary.** The ovary produces the ovum

when the ovum, matures, the follicle ruptures to release the ovum in the funnel

* **Funnel/ infundibulum –**
* It stores sperm
* It receives the ovum and fertilization takes places if sperms are present
* Chalaza is added and the egg moves to the magnum
* The egg takes ¼ hrs here
* **Magnum**
* **a**lbumen Is added here
* the egg moves into the Isthum
* egg stays here for three hours
* **isthmus**
* water, minera lsalts and vitamins are added
* shell membranes are also added
* addition of albumenis completed
* the egg moves to the uterus
* the egg takes 11/4 hrs here

* **uterus / shell germs.**
* The shell is added around the egg
* Shell pigment also occurs here
* Egg spends about 18 to 22 hrs here
* **Vagina**
* The egg is temporarily stored here
* The egg is inverted so as to be laid with the breed end first
* The egg is lubricated
* **Cloaca**
* It removes the egg

1. Describe the maintenance practices carried out on a tractor before it is put to daily use. 10mk)

* The engine oil should be checked and daily using the dipstick
* The fuel level should be checked and added it necessary
* Nuts and bolts should be tightened whenever they loosen
* The water level in the radiator should be checked and added if necessary
* The battery electrolyte should be checked daily and if below level, top – up should be done using distilled water.
* The bearing should be greased
* Tyre pressure should be checked and added if low
* Break shaft bearing should should be greased
* The break fluid and cluth fluid levels should be maintained at the proper levels
* Sediments from the sediment bowl should be removed
* Battery terminals should be cleaned and greased