**MARKING SCHEME**

**443/2**

**AGRICULTURE**

**FROM: FOUR**

**SECTION A 30 MARKS**

***Answer all the questions in this section***

1. **State four features that distinguish indigenous breeds from exotic breeds (2 Marks)**
* *Slow growth rate/ late maturity*
* *Low yields*
* *Tolerant to parasite and disease*
* *Can stay longer without food or water*
* *Requires less feed*
* *Hardy*
1. **Give four examples of heavy breeds of chicken (2 Marks)**
* *Light Sussex*
* *Rhodes island red*
* *New hamshire*
* *Black astralop*
1. **State four reasons for carrying out maintenance practices on a wheelbarrow (2 Marks)**
* *Increase durability*
* *Increase efficiency*
* *Minimize cost of repair and replacement*
* *To increase resale value*
1. **List any four farm tools and equipment that are complimentary in use (2 Marks)**
* *Trocar and canula*
* *Rubber ring and elastrator*
* *Bull ring and lead stick*
* *Cold chisel and mallet*
1. **Give 4 symptoms of the Newcastle disease (2 Marks)**
* *Birds have difficulties in breathing*
* *Beaks remain wide open and necks are strained*
* *Birds loose appetite*
* *Birds become dull*
* *Eggs laid have soft shells*
* *Often birds have their beaks and wings down*
* *Birds stand with eyes closed all the time*
1. **State four factors which determine the amount of feeds given to an animal (2 Marks)**
* *Level of production of the animal*
* *Activity performed by the animal*
* *Age of the animal*
* *Body weight/body size*
* *Type species of the animal*
* *Weather conditions/ temperatures*
1. **Give two functions of crop in poultry digestive system (1 Mark)**
* *Moisten food*
* *Temporally storage of food*
1. **A goat ate polythene papers accidentally name the stomach chamber where the papers will be found if slaughtered (1 Mark)**
* *Reticulum/ honey comb*
1. **Give two examples of zoonotic diseases (1 Mark)**
* *Brucellosis*
* *Anthrax*
1. **State 3 reasons why drenching is not an effective method of controlling internal parasites (1 ½ Mark)**
* *Does not eradicate all stages of parasite life cycle.*
* *Does not destroy the intermediate host*
* *Does not destroy parasites and stages in pasture, water*
1. **Give four maintenance practices that should be carried out on a permanent calf pen (2 Marks)**
* *Repair / replace the worn out parts of a calf pen*
* *Clean the calf pen regularly*
* *White wash the walls of a calf pen*
* *Ensure the drainage system is working*
1. **Outline advantages of using ox-drawn plough over tractor- drawn plough (2 Marks)**
* *Does not require skilled labour*
* *Its cheaper to buy an maintain compared to tractor*
* *Can be used in steep slopes where tractor cannot*
* *Can be used in small holding which is uneconomical than use tractor drawn plough*
1. **State four reasons for carrying out maintenance practices on a wheelbarrow (2 Marks)**
* *Increase durability*
* *Increase efficiency*
* *Minimize cost of repair and replacement*
1. **Name two non – chemical method of controlling ticks in cattle (1 Mark)**
* *Picking and killing*
* *Fencing the farm*
* *Rotational grazing*
* *Plough/ burning the pasture*
1. **State four practices carried out on the fish before preservation ( 2 Marks)**
* *Cleaning fish to remove scales and slime*
* *Removing to gut and intestines*
* *Cleaning the abdominal cavity*
* *Keeping the fish in open containers*
1. **Give four reasons why bees swarm from a hive (2 Marks)**

*Bad smell around the hive*

*Overheating in the hive*

*Infertile queen*

*Lack of food and water*

1. **Give the meaning of the following terms as used in livestock breeding**
2. **Close breeding -** *breading of very closely related animals*  **(½ Mark)**
3. **Cross breeding** *– mating* of *two animals to form different breads* **(½ Mark)**
4. **Hybdrid vigour** ­*– ability of the offspring to perform better than the parent*  **( ½ Mark)**
5. **Mothering ability** *– ability of the female animal to take care of the young ones* **( ½ Mark)**
6. **Name two methods of serving cows in dairy production (1 Mark)**

*Artificial insemination*

*Natural mating*

*Embryo transplant*

**SECTION B (20 MARKS)**

***Answer all questions in the space provided***

1. **The following illustration show behavior of chicks at different conditions in a brooder**
2. **Explain the conditions in each diagrams A,B,C and D (2 Marks)**

*A- Very cold*

*B – Very hot*

*C – Optimum temperature*

*D – Draught from one direction*

1. **Name two other behavior observations on chicks when temperature is very high in the brooder (2 Marks)**
* *Spread worms*
* *Pants/ wide open beaks*
* *Lie on their abdomen flat*
* *Make a lot of noise*
* *Drink a lot of water*
1. **The diagram below represents practice of identifying livestock on a farm**
2. **Identify the practice (1 Mark)**

Ear notching

1. **Determine the number that identifies the animal represented by the illustration (1 Mark)**

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1. **Draw a diagram of the animal identified by the number 148 on the farm (2 Marks)**
2. **Give two reasons why this method of identification is discouraged in livestock rearing (2 Marks)**

*It is painful*

*The wounds create entry of pathogens*

1. **The diagram below shows a plunge dip**
2. **State one sue of each of the parts labeled J,K and L (3 Marks)**

*J- Holding animals before dipping / watering area*

*K – Washing mud from cattle hooves contains CuSo4 for controlling foot rot*

*L – Holding animas briefly to let dip wash drip*

1. **State two precautions a farmer should take on the dip to ensure effective dipping (2 Marks)**
* *Proper mixing of acaricide*
* *Check concentration of dip rain wash/Avoid dilution by rain water/evaporation*
* *Topping up dip wash levels*
1. **The diagram below shows a type of silo.**
2. **Identify the type of silo drawn above (1 Mark)**
* *Clamp silo*
1. **Give two ways in which overheating can be avoided in the process of structure (2 Marks)**
* *Adding water*
* *Aerate silage/ reduce compaction*
1. **State two causes of silage losses (2 Marks)**
* *Exposure and contact with soil*
* *Entrance of water in the silo*
* *Entry of air in the silo*

**SECTION C ( 40 MARKS)**

**Choose and answer any two questions from this section**

1. **a) Discus the causes of stress in poultry (8 Marks)**
* *Lack of food and water*
* *Outbreak of pests and diseases*
* *Sudden change of routine practices e.g change of food, position of water etc*
* *Handling of birds during vaccination*
* *Sudden noise eg passing tractors ,airplanes , thunder etc*
* *Strangers and predators*

**b) Discuss mastitis under the following sub headings**

1. **animas affected** *-* *cattle, sheep, pigs, camels* **(1 Mark)**
2. **causal organism** *­­ bacterium /streptococcus, species*  **(1 Mark)**
3. **symptoms** *­­– milk contains pus, blood, thick clots*  **( 2 Marks)**
* *Milk turns watery*
* *Udder and teats are swollen*
* *Decline in milk production*
* *Death of the infected quarter*
1. **predisposing factors (4 Marks)**
* *age*
* *stage of lactation*
* *udder attachment (pendulous) and long teats are more susceptible*
* *incomplete milking*
* *mechanical injuries*
* *poor sanitation/low standards hygiene*
* *poor milking techniques*
1. **control measures (4 Marks)**
* *Use of correct milking techniques*
* *Dry cow therapy – infuse antibiotics into the teat canal when dry*
* *Use of strip cup to detect presence of mastitis*
* *Sharp objects from the grazing areas should be removed*
* *Open wounds on the eats should be treated*
* *Empty the affected quarters and administer antibiotics*
* *Observe hygiene/ use disinfectant*
1. **a) Explain factors that affect milk composition in dairy farming (10 Marks)**
* *Age of the animal – young animals produce milk with a higher butter fat content than older animas*
* *Condition of the animal – under extreme emaciation there is a substantial drop in the butter fat content of the milk. An animal at its late stages of pregnancy produces milk with low butter fat content.*
* *Stage of lactation and pregnancy – the butter fat content in milk tend to be higher at the middle phase of the lactation period, other milk constituents such proteins, and mineral increase in the second phase of lactation except lactose which increases slightly in the first two months and then gradually decline up to the end of the lactation.*
* *Completeness of milking – the last drawn milk from the udder has high butter fat content e.g milk drawn from the animal in the morning has lower fat content than that drawn in the evening.*
* *Breed differences – different breeds of animals produce milk with different percentage composition e.g Friesian produces more milk with little butter fat content*
* *Season of the year- fat percentage increase during cold seasons of the year*
* *The type of food eaten by the animal – an animal eating large quantities of roughages produce milk with fats proteins and lactose than an animal which is fed on a lot of grains*
* *Health of the animal- diseases such as mastitis lower the level of lactose or sugar in milk.*

**b) Describe factors considered when selecting breeding stock (10 Marks)**

* *age of animal – select animals that have not given birth several times/ ensure long production life*
* *temperament select animals with good temperament – they are easy to handle*
* *physical defects – animal with physical defects should not be selected*
* *health – select healthy animals*
* *climate – select animal/ breed that Is well adapted to climate of the area*
* *level of production – select animals with high levels of production potential for high production*
* *mothering ability – select animals with good mothering ability/ those that wean large number of young ones per littre.*
* *Growth rate – select animals that have fast growth rate*
* *Body conformation – select animals with right body conformation according to type*
* *Prolificacy – select animals that can give rise to large number of young ones/ those with twinning or multiple birth in sheep and goats*
1. **a) Describe the four stroke of an internal combustion engine (16 Marks)**

***induction stroke***

* *Starts when the piston is up*
* *Piston moves down the cylinder*
* *Intent valves opens*
* *Fresh petrol vapor and air mixtures get into the cylinder*

***compression stroke***

* *Starts when piston is down*
* *Inlet valve is closed*
* *The piston moves up the cylinder*
* *Fresh fuel mixture is compressed*

***power stroke***

* *Fresh air- fuel mixture is fully compressed*
* *A spark is produced at the spark plug*
* *Air fuel mixture ignites and expand*
* *Pressure created forces the piston down the cylinder*

***exhaust stroke***

* *Starts when the piston is down*
* *Piston moves up the cylinder*
* *Exhaust valves opens*
* *Gases from the burnt air- fuel mixture are expelled through the exhaust valve*

**b) State 4 advantages of four stroke engine (4 Marks)**

* *Produces high power/ can do heavy farm work*
* *Have efficient fuel and oil utilization*
* *Performs a wide range of farm operations*
* *The engines are efficiently cooled with water*
* *Exhaust gases are efficiently expelled*