**NAME: ………………………………… ADM NO: …………. CLASS: ………..**

**443/2**

**AGRICULTURE**

**PAPER 2**

**FORM FOUR**

**DEC 2021**

**MARKING SCHEME**

**INSTRUCTTIONS TO CANDIDATES:**

**1. This paper consists of three sections; A, B and C.**

**2. Answer all the questions in sections A and B.**

**3. Answer any two questions in section C.**

**4. All the questions should be answered in the spaces provided.**

**SECTION A: (30 MARKS)**

1. State four external predisposing factors of livestock diseases. (2 mks)

**- Unhygienic condition**

**- Overstocking**

**- Presence of parasites and vectors**

**- Rearing system.**

2. Differentiate between mothering ability and prolificacy in livestock. (2 mks)

**- Mothering ability – ability of dam to take care of off-spring until weaning**

**- Prolificacy – ability of a female to give birth to many off-springs.**

3. State two distinguishing external characteristics of California white rabbit. (2 mks)

**- Body coat white in colour**

**- Has black sears/paws/nose**

4. State four causes of infertility in dairy cattle. (2 mks)

**- Damaged uterus**

**- Disease infection e.g. vaginitis**

**- Blocked fallopian tubes**

**- Retained placenta**

**- Old age**

5. State the functions of the following hormones in livestock:- (1 mk)

**(a) Oxytocin - Stimulate milk let down**

**(b) Stilbestrol – Suppress male characteristics and stimulate fattening.**

6. State two reasons for clipping the upper beak in poultry management. (1 mk)

**- To avoid cannibalism - To control feather plucking**

**- To prevent egg eating**

7. Name the set of tools used for the following farm operations.

(a) Controlling bloat

- **Trocar and canula**

(b) Restraining an animal during agricultural show exhibition. (1 mk)

**- Bull ring and lead stick**

8. Name three types of calf pens that can be constructed on a farm. (1 ½ mks)

**- Movable calf pens**

**- Permanent calf pens**

**- Raised pens with slated floors**

9. Give three reasons why honey harvesting is discouraged at night. (1 ½ mks)

**- Harvested honey may be contaminated**

**- To avoid possible bush fire**

**- Not easy to distinguish honey combs and brood combs.**

10. Outline four uses of the gear box in a tractor. (2 mks)

**- Provide different forward speeds**

**- Allows driver to select any forward or reverse gear**

**- Allow change in the speed ratio**

**- Allows stopping of tractor without stopping the engine.**

11. Give the importance of each of the following rearing practices in calves.

(i) Single housing of calves - (1 mk)

**- Prevents licking each other**

(ii) Removal of extra teats - (1 mk)

**- Ensures there is no obstruction in machine milking**

**- Prevents interference in development of normal teats**

12. List four essentials of clean milk production. (2 mks)

**- Healthy milking herd**

**- Healthy and clean milk man**

**- Clean milking shed**

**- Clean milking utensils**

**- Milk filtration, cooling and storage**

**- Avoid flavours in milk**

13. Give two features that enable the gizzard to carry out its functions effectively.(1 mk)

**- Presence of grit**

**- Presence of tough muscles.**

14. Give the appropriate term used to describe the following in chicken:-

**(i) From hatchery to 8 weeks - Chick**

**(ii) Rendered Sterile - Capon.**

**(iii) Reared for meat – Broiler**

**(iv) Female from 8 weeks to point of lay - Pullet**

15. State four reasons that make a farmer castrate his/her billy. (2 mks)

**- Controlling breeding diseases**

**- To control breeding**

**- To remove unpleasant smell in meat/chevron**

**- Prevent inbreeding**

**- Reduce aggressiveness of billy**

16. List three protozoan diseases that are spread by vectors. (1 ½ mks)

**- East Coast Fever**

**- Anaplasmosis**

**- Trypanosomiasis**

17. Mention three methods of selection in livestock breeding. (1 ½ mks)

**- Progeny testing**

**- Mass selection**

**- Contemporary comparison**

18. List two diseases that attack bees in a colony. (1 mk)

**- Acarive**

**- American foul brood**

**SECTION B: (20 MARKS)**

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

19. Below is a diagram of a grain store.

(a) Name the part labeled A. (1 mk)

**- Rat guard/Metal deflector/baffle**

(b) State one maintenance practice to be carried out before introducing a new produce.

(1 mk)

**- Dusting/fumigating**

(c) Why is it important to have some open spaces on the walls of the store. (1 mk)

**- To allow freed air circulation**

(d) Besides the store having open spaces, state two characteristics that make the store suitable

for storing grains. (2 mks)

**- Its raised - Leak proof**

**- Vermin proof - Well secured**

**- Easy to load and offload - Cool to prevent overheating**

20. Study the diagrams below of some workshop tools and the answer the questions.

(a) Identify the tools P, Q, R and S.

**P – Try square Q – Spirit level**

**R – Back/Tenon saw S – Cold chisel**

(b) Give one use of tools P and R in the construction of a wooden feed trough.(2 mks)

**P – Measure vertical and right angles**

**R – Fine sawing**

(c) How would the tool labeled Q be used in the construction of a calf pen? (1 mk)

**- To measure the horizontal of the trough.**

21. The illustration below shows livestock production equipment. Study it and answer the

questions that follow.

(i) Identify the equipment. (1 mk)

**- Artificial vagina**

(ii) What is the importance of warm water in the equipment. (1 mk)

**- Provides suitable temperature for ejaculation**

(iii) Describe the procedure followed when using the equipment in collection semen.

**- Restrain the cowl in a crush**

**- When the bull mounts, grab the penis**

**- Direct the penis into the artificial vagina**

**- Warm water provided, makes the bull ejaculate**

**- Release the bull and cow.**

(3 mks)

22. The diagram below shows a cross-section of a plunge dip. Use it to answer the questions

that follow.

(i) Name the parts labeled A and B. (2 mks)

**A – Silt trap outlet**

(ii) State the use of parts A and D. (2 mks)

**A - Trap silt/mud to prevent it from going back to the dip tank**

**B – Wash/remove mud from fat; has CuSO4 to control foot rot.**

(iii) State one advantage of holding cattle for some time in C. (1 mk)

**- To minimize wastage of acaricide**

**- To minimize pasture contamination**

**SECTION C: (25 MARKS)**

**Answer any two questions in this section.**

23. (i) Describe the life cycle of a two host tick. (5 mks)

**- Ticks lay eggs on the g round**

**- Eggs hatch into larva**

**- Larva climb on vegetation and wait for first host**

**- Larva attach on host, suck blood and become engorged**

**- Larva moult into nymph**

**- Nymph feed on the same host, become engorged and drop to moult.**

**- Emerged adult feed on second host, become engorged, mate and female drop to lay eggs**

(ii) Outline five maintenance practices carried out on tractor battery. (5 mks)

**- Topping electrolyte using distilled water**

**- Clean corroded terminals**

**- Fix tightly to avoid spoilage and damage**

**- Fix battery correctly on the tractor**

**- Charge the battery periodically**

**- Ensure the battery is always charged**

**- Fan belt tension should be checked**

**- Empty battery content in case of prolonged storage.**

(iii) Discuss five factors considered when siting a fish pond. (10 mks)

**- Availability of water: - enough water flowing freely must be available for oxygen supply**

**- Slope of land: - Land should be gentle sloping for easy flow of water into and out of the**

**pond.**

**- Soil: - Clay soil is recommended for its water retention ability**

**- Security: - Pond should be sited at a secure place from predators and thieves.**

**- Accessibility: - Pond area has to have each reach for easy transportation of fish**

24. (a) Explain the operational differences between a disc plough and a mouldboard plough.

(10 mks)

|  |  |
| --- | --- |
| **Disc plough** | **Mould board plough** |
| Can work on fields with obstacles | Rigid, hence breaks easily, hence cant |
| Leaves the field rough | Leaves a clean field |
| More secondary operations needed | Few secondary operations |
| Cuts it varying depts. | Operates at uniform depth |
| Not easily broken | Easily broken |
| Requires less power to pull | Needs more power to pull |
|  |  |

|  |  |
| --- | --- |
|  |  |
|  |  |

(b) Explain the procedure used when constructing a barbed wire fence. (10 mks)

- Clear vegetation from fence line

**- Measure and mark points where holes will be made**

**- Dig holes (60cm deep for standard posts) and (75 – 9cm deep for corner and gate posts)**

**- Place the posts in the holes**

**- Reinforce the gate and corner posts with struts and braces**

**- Place concrete/soil in the holes and tighten it by wire strainer**

**- Fix the wire using staples (U-nails)**

**- Fix the remaining wire strands using staples**

**- Reinforce the wires with droppers.**

25. (a) Describe the management of day-old chicks to the point of laying. (14 mks)

* **Prepare the brooder early enough before chicks arrive**
* **Clean and disinfect the brooder house**
* **Place enough feeders and waterers in the brooder**
* **Place newspapers on floor and put some feed on it to train chicks to eat**
* **Ensure the heat source is working**
* **Add some glucose to water to give them energy**
* **Remove any dead chick and dispose them properly**
* **Vaccinate them**
* **Feed them on chick mash upto 8th week**
* **Ensure dim light to curb toe pecking**
* **Provide with enough clean water**
* **Introduce grit towards 8th week**
* **Introduce growers mash on 7th week gradually**
* **Clean feeders and waterers daily**
* **Control parasites and diseases**
* **Hang green leaves to keep them busy**
* **Gradually introduce layers mash before they start laying**

(b) Describe the precautions that should be taken when handling bees. (6 mks)

* **Do not frighten bees**
* **Approach bee hives from the back**
* **Do not crush bees**
* **Make quiet movements towards the bee hive**
* **If stung, remain calm**
* **Do not rub a bee sting, rather scrap with a sharp nail or razor blade**
* **Wear protective clothing**
* **Use the smoker properly**