**NAME:………………………………………….. INDEX NO…………………………**
**SCHOOL:……………………………………… CANDIDATE’S SIGN ……………..**

**DATE ………………………………**

443/2

**AGRICULTURE MARKING SCHEME**

**Paper 2**

2021
**Time: 2 Hours**

**ELDORET DIOCESE EXAM 2021**

***Kenya Certificate of Secondary Education (K.C.S.E)***

443/2

**AGRICULTURE MARKING SCHEME**

**Paper 2**

2021
**Time: 2 Hours**

**INSTRUCTIONS TO CANDIDATES**

1. Write your name and index number in the spaces provided above

2. Sign and write the date of examination in the spaces provided above.

3. This paper consists of three sections: A, B and C

4. Answer all the questions in section A and B and any **two** questions from section C

5. Answers should be written in the spaces provided.

**For Examiner’s Use Only**

|  |  |  |  |
| --- | --- | --- | --- |
| **Section** | **Question** | **Maximum Score** | **Candidate’s Score** |
| A | 1 – 20 | 30 |  |
| B | 21-24 | 20 |  |
| C | 25-27 | 20 |  |
|  |  | 20 |  |
|  | **Total Score** | **90** |  |

**SECTION A**

1. **Livestock which can be castrated using a rubber ring**
* He goat
* Male calves
* Rams

  **2x**$\frac{1}{2}$**=1mk**

1. **Definition of “breach of birth” as used in livestock production**
* It’s a presentation during parturition where the hind legs of the new born comes out first **1x1=1mk**
1. a) **Camel breed that is adapted to cooler regions and as a wooly body covering**
* Bareterian **1x**$\frac{1}{2}$**=** $\frac{1}{2}$ **mk**

 b**) Give three ways used to improve production in indigenous cattle**

* Cross breeding with exotic breeds with superior
* Supplementary feeding
* Proper control/prevention of livestock diseases

 **3x**$\frac{1}{2}$**=1**$\frac{1}{2}$**mks**

1. **Methods of administering vaccines to livestock**
* Injection
* Oral/through the mouth
* Nasal/inhalation
* Through the cloaca
* Ocular/through the eye

  **4x**$\frac{1}{2}$**=2mks**

1. **Uses of bedding materials in a poultry house in deep litter system**
* To provide warmth
* To absorb moisture to prevent dampness

 **2x**$\frac{1}{2}$**=1mk**

1. **Pairs of livestock tools which are always used together**
* Trocar and canula
* Hypodermic syringe and a needle
* Elastrator and rubber ring
* Bull ring and lead stick

 **2x**$\frac{1}{2}$**=1mk**

1. List **two** types of feed additives
* Hormone eg. stilbestrol and oxytocin.
* Antibiotics e.g. tetramycin.
* Medicant e.g. caccissostate. **3x**$\frac{1}{2}$**=1**$\frac{1}{2}$**mks**
1. **Factors that may lead to dip wash being exhausted or weakened while in the dip tank**
* Evaporation
* Dilution by rain water in case of roof leakage
* Leakage at the bottom/cracks at the bottom or walls
* Dirt/impurities from the animal’s body

  **3x**$\frac{1}{2}$**=1**$\frac{1}{2}$**mks**

1. **Practices which are carried out to control mastitis in lactating cows**
* Practice farm hygiene/milk infected cause last/use separate udder cloth for each cow/use disposable udder cloth
* Practice that dips after milking
* Practice good milking technique
* Apply milking salve/jelly to prevent drying and cracking of teats
* Immediate treatment of infected cows to avoid spread of the disease/treat any would on the teat/udder  **4x**$\frac{1}{2}$ **=2mks**
1. **Signs of heat in rabbits.**
* Restlessness
* Frequent urination
* Swollen vulva
* The doe throws itself on its sides
* Rubs herself against the wall/object.
* The doe peeps through the cage wall.
1. **Maintenance practices carried out on the water cooling system of a tractor**
* Keep the radiator fins free of rubbish and dirt
* Ensure the fun belt has the right tension
* Ensure all loses are tightly fitted to prevent leakage
* Top up the level of water in the radiator before using the tractor
* Replace worn out parts eg fan belt, hose pipes radiator cap
* Lubricate radiator pump regularly
* Repair the radiator
* Tighten loose bolts and nuts

 **4x**$\frac{1}{2}$**=2mks**

1. **Behavior of chicks which would indicate that the temperature in the brooder is too high**
* Chicks moves away from the source
* Parting/opening beaks
* Opening/spreading the wings
* Making abnormal noise
* Drinking water excessively
* Chicks may lie flat on their bellies

 **4x**$\frac{1}{2}$**=2mks**

1. **Desirable characteristics that should be considered when selecting a heifer for milk production**
* Level of production
* Health/growth rate/age
* Fertility rate/mothering ability
* Body conformation
* Disease resistance
* Temperament / adaptability

  **4x**$\frac{1}{2}$**=2mks**

1. **Functions of calcium in dairy cows**
* A component of milk
* Formation of skeleton/teeth
* Blood clotting
* Nerve functioning/control milk fiver
1. **Notifiable diseases in cattle**
* Anthrax
* Foot and mouth disease
* Rinderpest
* Rabies
* Lumpy disease
1. **Channels through which beef is marketed in Kenya**
* Local butcheries
* Kenya meat commission
* Livestock marketing division **2x**$\frac{1}{2}$**=1mk**
1. **Factors that may influence the pulse rate of a sheep.**
* The sex of the animal
* Age of the animal
* Degree of excitement
* The physiological status of the animal e.g pregnancy

***4x ½ =2 marks***

1. **Properties of concrete that make it suitable for constructing farm building**
* Its durable
* It is easy to clean
* It is fire proof
* Can be molded into various shapes **3x**$\frac{1}{2}$ **=1**$\frac{1}{2}$**mks**
1. **Reasons why breeding boar may be culled. (2 marks)**
* It avoids incidences of blow fly infestation
* Old age.
* Poor health.
* Infertility / low libido.
* To stop breeding.
* Hind leg weakness / when too fat or too lazy.
* Bad temperament / aggressiveness.
* Poor performance of offspring

  **2x**$\frac{1}{2}$**=1mk**

1. **Functions of a footbath in a plunge cattle dip**
	* Wash animal hooves to remove mud
	* Contain chemicals to control foot rot

***2x ½ =1 mark***

**SECTION B**

1. **Farm implement.**
2. **Identify the implement.**

Disc plough

1. **Name the parts labeled U and V and give one function of each.**

U - Furrow wheel/depth wheel

 - Controls the depth of ploughing

V - Disc

 - Cut and invert the furrow slices

1. **Ways of adjusting the depth of ploughing**
* Add weight to the plough beam
* Adjust the cutting angle of discs
* Use of draft control lever
* Exert more hydraulic force
* Use fewer discs
1. i) **The parts of an egg labeled N,O and P**

 O – Outer shell membrane

 P – Shell

ii) **Functions of**

 M – to keep the yolk and germ spot in position/ Germ spot to keep facing up.

 L – for gaseous exchange

iii) **Reason for egg turning during incubation is**

 - To avoid the developing embryo from sticking on one side of the egg hence

embryonic mortality

1. a) Crush *1****mk***

 b)

* Spraying against external parasites
* Dehorning
* Hoof trimming
* Taking body temperature
* Treating sick animals
* Milking 6 ***x ½ = 3mks***

 c)

* Repair broken wooden post/timber
* Clean after use
* Regular inspection
* Replace yoke when the need arises ***2 x ½ = 1mk***
1. a) **Name the parts labeled A, B and C** (3 marks)
	* + Spray tank
		+ Trigger
		+ Nozzle

(b) **State the use of the equipment shown above.** (1 mark)

* Spraying chemical solutions.

(c) **Give one maintenance practice carried out on the equipment**. (1 mark)

* Clean after use
* Oil the moving parts.
* Store under shade.

**SECTION C**

1. **a) Live cycle of a tapeworm (taenia spp)**
* Mature segments / proglottids full of eggs are dropped with human faeces
* Eggs are then released from the segments
* Cattle/pigs ingest the eggs during grazing/feeding
* In the intestines the eggs hatch into embryos
* The embryos penetrate the intestine walls and enter the blood stream
* The embryos first localize in the liver
* From the liver, the embryos are distributed into the muscles in the body
* In the muscles, they become cysts/bladder worms
* Human being are injected when they eat raw/under cooked beef/pork with the cysts
* In the human small intestines, the cysts wall dissolves, the bladder worms emerge and attach on the intestine walls
* They then develop into adults worm and starts laying eggs

 **10x1=10mks**

 **b) Management practices that would ensure maximum yield of fish in a fish pond**

* Control stocking rate
* Control of water pollution
* Supply adequate feed regularly
* Provide appropriate feed
* Aerate the water by ensuring constant inflow and outflow
* Control predators
* Harvest fish at the correct maturity age
* Maintain appropriate water level in the fish pond always

 **5x1=5mks**

 c) Functions of water in nutrition

* Components of body cells and many body fluids e.g blood
* Used in biochemical reactions in the body eg digestion
* Regulate body temperatures trough sweating and evaporation
* Excretion of metabolic wastes from the body
* Formation of the products eg milk, eggs etc
* Makes cells turgid to maintain their shape
* Transportation of nutrients

 **5x1=5mks**

**26. Management of layers from one day old to the start of laying in a deep litter system.**

* Disinfect the brooder 2 — 3 days before the day old chicks are brought in.
* Spread newspaper over the litter to prevent chicks from eating litter.
* Spread some food on the newspaper so that chicks can learn to eat.
* Remove the newspaper when the chicks have learnt to eat from feeders
* Feed on chick mash up to 8th week.
* Gradually introduce growers mash from week
* Debeak (on the 10th day)
* Keep chicks in the brooder for 6—8 weeks.
* Provide and maintain source of heat as necessary.
* Provide adequate clean water
* Vaccinate against common diseases especially Newcastle.
* Control external parasites
* Insulate sick chicks
* Treat sick chicks.
* Introduce roosts for perching (on 6th week)
* Introduce grit / sand to help in digestion.
* Hang green vegetable to keep them busy.
* Feed on grower’s marsh to 18th – 20th week.
* Gradually replace by layers mash from 18th week.
* A specific day/week must be indicated to award mark.

 (1 ×10 = 10 mks)

(b) **Five advantages of using animal power in the farm**.

* Does not require skilled labour as compared to engine power.
* Animals are cheaper to buy and maintain.
* Work output is higher than that of human beings.
* Can work in areas where tractor can’t reach.
* Work better on small holdings than tractors.

(1 x 5 = 5 mks)

1. **Importance of keeping animals healthy.**
* Grow fast and reach maturity quickly.
* Gives animals a longer economic and productive life.
* Maintains a high productivity.
* Produce good quality products thus command high market value.
* Will not spread diseases to other animals.
* Are economical and easy to keep.

27**. Mastitis disease under the following subheading**

(a) (i) - Streptococcus agalactinae /

- Staphylococcal mastitis

(ii)

* age
* Stage of lactation period
* Udder attachment
* Incomplete milking
* Mechanical injuries
* Poor sanitation
* -Poor milking technique.

(iii)

* Pus, blood, thick clots in milk or watery milk
* Pain when milking / udders / teats are swollen
* Death of infected quarter.
* Salty taste in milk, fine clots or flakes in fore milk

(iv)

* Empty the affected quarter of udder and instill antibiotic
* Use teat dip on each teat after every milking.
* Use the right milking technique.
* Strict cleanliness and use of disinfectant during milking.
* Dry cow therapy. / Infusing a long acting antibiotics into the teat canal when drying off the cow.
* Use a strip cup to test for mastitis, infected animals should be milked last.
* Use separate udder clothes
* Remove sharp objects from grazing and milking areas to prevent teat injury
* Open wound on the teats should be treated immediately

b) **Eight factors that affect milk composition in dairy farming.** (8 marks)

* Age of the animal – Butter fat in milk becomes less as an animal grows old thus young animals produce milk with higher BF than older animals.
* Breed – Different breeds of cattle produce milk with differing percentages composition e.g. Jersey produces higher BF than Friesian.
* Type of food eaten by an animal – Roughage feeds produce milk with higher fats, lactose and protein compared to grains.
* Disease – Diseases such as mastitis reduce lactose composition in milk because bacteria attack milk sugars.
* Physiological condition – of the animal.
* Sick / extremely emaciated animals register low percentage of BF.
* During late pregnancy cows produce milk with low BF content.
* Stage of lactation – The butter content in milk is highest at the middle phase of the lactation period and lowers towards the end of lactation.
* Time of milking – Milk produced in the morning has lower BF content than produced in the evening.
* Season of the year – BF content increases during cold season.
* Completeness of milking – The last drawn milk from the udder contains 10% total BF content.
* Thus milk drawn last from the udder has higher BF content.