**443/2**

**AGRICULTURE**

**PAPER2**

**MARKING SCHEME**

1. **Breeds of dairy goats**

- Toggen burg

- Saanen

- German Alphine

- Anglo-nubian

- Jamnapari.

 4x ½ = 2 marks

1. **Ways which can be used to improve the production of milk in indigenous cattle**

- Cross breeding with exotic breeds

- Feeding on highly nutritious feeds

- Proper control of parasites and diseases

 2x1=2marks

1. **Ways in which ticks cause damage to the livestock**

- Causes injury to the skin

- Opens up way for entry of disease-causing organisms

- Transmits pathogens

- Suck blood causing anaemia

- Causes irritation to the animal

 4x ½ = 2 marks

1. **Farm tools used for each of the following operations listed below**
2. **Tightening barbed wire during fencing**
* Wire strainer /monkey winch
1. **Smoothening of concrete floors**

 - Steel float

**c) Giving liquid drugs to livestock through the mouth**

 - Drenching gun

**d) Sharpening the teeth of across-cut saw**

 -Triangular file

 4x ½ = 2 marks

**5. Reasons why goats are popular in most parts of Kenya**

- They can survive with little amounts of water for a long period of time

- They are good browsers

- They have a small surface area, hence able to regulate temperatures

- They are resistant to most pests and diseases

- They are hardy in that they can survive under harsh climate conditions e.g. drought

- They can walk for long distances in search for food and water

 4x ½ = 2 marks

1. **Non-pathogenic causes of disease in livestock**

- Poor nutritional /nutritional deficiency

- Food poisoning

- Poisonous chemicals

- Physical injuries

 4x ½ = 2 marks

1. **Factors considered when making a choice of building materials**

- Availability of the material

- Durability of the material

- Workability of the material

- Suitability of the prevailing weather

- Use of the structure in relation to the material

- Strength of the material

 4x ½ = 2 marks

1. **Diseases of poultry controlled through vaccination**

- Fowl typhoid

- Newcastle disease

- Fowl pox

- Gumboro disease

- Marek’s disease

 4x ½ = 2 marks

1. **Factors considered when selecting eggs for incubation**

- Storage period from the time of laying

- Whether the egg is fertilized or not

- Presence of air spaces/degree of porosity/dirt on the eggs

- Irregular shape/whether broken

- Being undersize/oversize

- Internal abnormalities

 4x ½ = 2 marks

1. **Factors that determine the quality of beef meat**

- Tenderness of the meat-Tender meat is more preferable than tough meat

- Colour- Cherry red colour is most preferred

- Leanness- Lean meat with little fat is more preferable

- Taste and flavor

- Juiceness – This is determined by the uniform distribution of fat within the lean meat

 4x ½ = 2 marks

1. **Two hormones that control milk secretion**

- Oestrogen

- Prolactin 2x1=2marks

1. **Name four major systems of a tractor**

- Fuel transmission system

- Electrical system

- Cooling system

- Lubrication system

- Power transmission system

 4x ½ = 2 marks

**a) Name the part responsible for each of the**

**functions mention below in a disc plough**

**Adjusting ploughing depth**

* Depth wheel

 **Adjusting width of ploughing**

* Cross shafe

 2x ½ = 1 mk

**b) State the functions of the following parts in a mould board plough**

1. Frog- Connects the share, the landside and mould board to the beam
2. Landside- Stabilizes the plough by counteracting side thrust

2x ½ = 1 marks

1. **Causes of egg eating in a flock of birds**

- Inadequate laying boxes

- Broken eggs and egg shells

- Bright light in the laying nests

- Deficiency of minerals such as calcium in the diet

- Idleness among birds

- Delayed collection of eggs

4x ½ = 2 marks

1. **a) Duration of heat period in a cow**

 18-30 hrs

 **b) When should a cow be served from the time signs of heat are noted for successful conception?**

 -12th – 18th hour

 **c) i.** 20 days

 **ii.** 14 days

4x ½ = 2 marks

**SECTION B:**

**a) A** - Brisket

 **B** - Muzzle

 **C** - Hock

 **D** – Poll

4x ½ = 2 marks

**b) Parts of the cow that are preferred by a two-host tick (2mks)**

i) Ears

ii) Anus

iii) Udder

 iv) Tail

4x ½ = 2 marks

1. **Procedure to follow when hand spraying for effective use of an acaricide in control of ticks**

- Prepare acaricide solution to the collect strength in an appropriate container

- Put the solution into a bucket spray pump, stirrup sprayer

- Restrain the animal in a crush

- Start spraying evenly at the back of the animal

- Next spray the belly region including the udder / scrotum

- Spray the hind, tail and hind leg region

- Spray the neck region and the forelegs

- Finally spray the head

- Allow to drip and dry for a few minutes

- Release the animal

***Any first 4 points*** 4x ½ = 2 marks

**17.**

**a) Identify the equipment labeled K and L**

 **K** - Stirrup pump

 **L** - Knapsack sprayer

2x ½ 1mk

**b)** K;

1-Handle

2-Trigger

3-Lance

4-Nozzle

4x ½ = 2 marks

L;

A-Handle

B-Straps

C-Hose pipe

D-Tank

E-Trigger

F-Lance

G-Nozzle

6x ½ = 3 marks

**c)** L is used for spraying crops against pests and diseases while K is used to spray acaricides onto animals against external parasites

1x1=1mark

**18.**

**a) i. Name the type of beehive**

 - African Log Hive

1x1=1mk

 **ii.** A - Entrance holes

 B - Suspending wire

2x ½ 1mk

1. **Advantages of using the Kenya Top Bar Hive (KTBH) over the type of beehive named in i. above**

- Easier to construct

- Cheap to construct

- Harvested honey is free from contamination

- Top bars can be removed to inspect combs and can be replaced without problems.

- More wax and honey is harvested

- Honey combs can be removed without causing destruction to the brood

2x1=2mks

**b) Factors to consider when siting an apiary**

- Nearness to water source

- Away from human and livestock habitats

- Availability of shade to cool the hive

- High population of flower producing plants

- Away from disturbances

- Sheltered from the wind

**c)** **Two diseases that attack bees**

- Acarive disease

- American foulbrood

 2x ½ 1mk

**SECTION C: (40 MARKS)**

**19.**

**a) General control methods of ticks**

- Spraying with acaricides

- Ploughing of pastures to expose ticks

- Double fencing to keep off stray animals

- Rotational grazing

- Removal by hand (deticking)

- Burning tick infested areas

- Biological control through use of birds e.g. egrets

- Hand dressing with jelly based acaricides i.e. pyegrease

 (First 6 points)6x 1= 6mks

**b) Functions of proteins in the animal’s body**

- Repair of worn out parts

- Growth and development

- Provision of energy after deamination

- Enhancing reproduction

- Formation of products like milk, meat and eggs

- Production of antibodies for good health

- Production of hormones like insulin

5x 1= 5mks s

**c) Reasons as to why livestock should be fed**

- Enhance growth and development

- Create resistance against diseases

- For provision of energy

- For increased production of various products

- For better reproduction

 (First 4 points)4x 1= 4mks s

**d) Importance of castrating males of livestock**

- Helps to control mating

- Controls inbreeding

- Sexually transmitted diseases controlled e.g. vaginities, Brucellosis and trichomoniasis

- Enhances faster growth

- Males become docile / less aggressive

- Quality of carcass improves

5x 1= 5mks

**a) Procedure of Harvesting Honey**

- Approach the hive quietly from the back and blow 2-3 smoke puffs with the help of smoke

- Remove the hive cover (roof)

- Remove the top bars one at a time using the hive tool

- Gently shake off the bees or brush them off using a bee brush

- Cut the ready combs which are light coloured using a hive knife into the honey container

- Leave 3cm of the comb still attached to each bar

- Leave some honey in the hive

- Return the bars ensuring that no crevices are left

- Return the hive into position.

7x 1= 7mks

 **b) Qualities of a good calf pen**

- Should be well ventilated

- Should be free from draught

- Should be well lit

- Should have proper drainage

- Should be easy to clean

- Should provide enough security

- Should be spacious (at least 1.8mx1.5m)

- Should allow access to sunlight

- Should only be enough for single calf

- The floor should be slated

 (First 7 points)7x 1= 7mks

**c) Causes of stress to the flock of birds**

- Sudden change in weather conditions

- Drastic change in routine practices

- Excessive handling of birds when injecting them against diseases

- Introducing new birds to old flock

- Sudden occurrence of loud noises

- Too many strangers in the poultry house

- Overcrowding the recommended floor space of 2 birds/m2

- Poor feeding practices e.g. sudden change from one type of food to another.

- Attack by parasites

- Inadequate feed and water

6x 1= 6mks

**21.**

**a) Predisposing factors to mastitis**

- Incomplete milking

- Age of animal (old animals are mostly vulnerable)

- Level of milk production (high milk producers are affected more)

- Way the udder is attached to the body (pendulous attachment)

- Poor sanitation

- Poor milking techniques

- Mechanical injuries to the tests

- Genetic factors

5x 1= 5mks

b**) Symptoms of mastitis**

- Presence of clots in the milk, pus or blood

- Udder is painful to touch

- Blocked teat canals

- Drop in milk production

- Refusal to be sucked.

- Milk is watery

 (First 4 points)4x 1= 4mks

**c) Maintenance practices of a tractor**

- Check tyre pressure and adjust accordingly

- Replace the lost nuts and bolts

- Tighten loose nuts and bolts

- Grease the moving parts

- Check on the fan belt tension and rectify accordingly

- Scrub corroded battery terminals and apply petroleum jelly

- Remove solid sediments from the sediments bowl

- Check on oil level with dip stick and top up if necessary

- Check fuel level and add if low

- Check battery electrolyte level and top up with distilled water if necessary.

6x 1= 6mks

**d) Characteristics of exotic cattle breeds**

- Have no hump

- Low tolerance to high temperatures

- Susceptible to tropical diseases

- Fast growth rate leading to early maturity

- Good producers of both meat and milk

- Cannot walk long distances

- Have short calving intervals

5x 1= 5mks