231/2
AGRICULTURE
PAPER 2
MARKING SCHEME.

SECTION A

1. Dairy goats

- Toggen berg
- British Alpine
- Aglo — Nubian
- Jamnapari

(½ ×2=1 mk)

2. **Jesrey cattle requires less food than other dairy animals.**
   - It can survive on poor pasture
   - It's more tolerant to heat.

(2 × ½ = 1 mk)

3. **— Hot water treatment / steam the equipment**
   - Dry in direct sunlight
   - Use of chemical sterilizers

(2× ½ = 1 mk)

4. **Clutch**
   - Gear
   - Differential
   - Final drive
   - Driving axle wheels

Any 4 × ½ = 2 mks)

5. **Reasons for treating timber**
   - Increase durability
   - Prevents damage by rodents.
   - Prevents rotting
   - Improve their workability

4 × ½ = 2 mks

6. **Taking the cow to the milking palour**
   - Presence of calf I milkman
   - Washing the udder with warm water
   - Feeding
   - Making familiar / sounds
   - Maintaining regular milking intervals.
   - Massaging the udder

Any 3 × ½ = 1 ½ mk

7. **Functions of calcium in dairy cows**
   - Helps in formation of bones and teeth
   - Helps in milk formation
   - Helps in blood clotting
   - Helps in nerve function / prevent milk fever.

   4x ½ = 2marks

8. **Keeping birds busy**
   - Hanging vegetables in the poultry house
   - Scattering grains on the floor in deep litter house

   2x ½ = 1 mark

9. **Symptoms of mastitis**
   - Blood spot in milk
   - Flakes in milk
   - Thin and watery milk
   - Pus in milk

   4 x ½ = 2 marks

10. **Signs of parturition in a cow**
    - Restlessness
    - Enlargement or swollen vulva
    - Clear mucus discharge horn the vulva
    - Slackening of pelvic muscles or relaxing of hip muscles
    - Full and distended udder
    - Thick milk from teats I colostrums drips
    - Water bag appears which may burst.

    4x ½ = 2 marks

11. **Points of attachment of tractor implements**
    - Draw bar
    - Lower link attachment
    - Top link attachment

    2x ½ = 1 mark

12. **Importance of lubricant system in a tractor**
    - Reduce friction wear and tear
    - Reduce heat between rubbing surface and engine.
    - Clean agent since it washes away dust, soot and metal clippings from the oil path to the sump.
    - Prevents visiting of metallic parts

    4x ½ =marks

13. **Methods of stocking beehive**
    - Use of catcher box

- Use of swarm net
- Placing the hive in a convenient place and smearing aromatic old combs to attract bees.2 x ½ = 1 mk

14. **Structural requirements of a rabbit hutch**
    - Well ventilated
    - Drought free
    - Spacious
    - Raised up to 100cm above the ground 4x ½ = 2 marks
15. **Signs of stress in chicken**
    - Unusual noise
    - Crowding at one point
    - Hiding under structures
    - Alertness towards a certain direction
    - Poor feeding
    - Reduction in egg production 4x ½ = 2marks
16. **Characteristics of succulent roughages**
    - High carbohydrate content
    - High fibre content
    - High moisture content
    - Low protein 4 × ½ = 2 marks
17. **Tools for**
    - Bolus gun
    - Teeth clipper
    - Weighing balance
    - Tape measure 4x ½ = 2 marks
18. **2 diseases transmitted by brown eartick**
    - East coast fever
    - Anaplasmosis
    - Nairobi sheep disease 1 mk
19. **Roofing materials**
    - Grass - thatch
    - Galvanised sheets
    - Asbestores
    - Tiles
    - Fibre

SECTION B

20. a) M – Piston
       N – Crankshaft
       P – Differential axle (@ ½ x 3 = 1 ½ mks)
    b) - Transmits/ breaks power from the engine to the selected gear

- Stops the tractor while the engine is running for gradual acceleration from rest position
- For gradual engagement of power to the rear wheels. (@ 1 x 3 = 3mks)

21. a) A – Oviduct
X – Uterus / shell gland
Y – Magnum (@ ½ x 3 = 1 ½ mks)
b) - Water
- Vitamins
- Mineral salts (@ ½ x 2 = 1mk)
c) 18 – 22hours (½ mk)
d) Part Q (½ mk)

22. a) X – wood chisel (½ mk)
Y – cold chisel (½ mk)
b) D – Cutting edge
E – Bevel edge blade
F – Shoulder
G – Header (@ ½ x 4 = 2mks)
c) Oilstone (½ mk)

23. a) B – Landside
D – U-bolt
F – Draft rod (@ ½ x 3 = 1 ½ mks)
b) A – invert furrow slice
C – Cut furrow slice horizontally
E – Adjust the depth of ploughing (@ ½ x 3 = 1 ½ mks)
c) - Cheap to buy
- Few skilled labour is required to use
- Plough on any land topography
- Economical to small scale farmers (@ ½ x 4 = 2mks)

24. a) Ear notching (½ mk)
b) - Facilitate culling
- Ease in record keeping
- Ease feeding
- Facilitate disease control
- Facilitate selection and breeding (@ 1 x 2 = 2mks)

SECTION C

25. (a) Red legged tick (Rhipicephalus evertsi)
Brown ear tick (any 1x1=1mk)
(ii) High fever 41oC
Swollen lymph nodes which appear around the ear
Difficulty in breathing
Nasal discharge
Rough coat

Lachrimation (any 4x1=4mks)

(iii) Double fencing
Ploughing infested areas
Rotational grazing
Use of predators
Picking and killing (any 4x1=4mks)

(b)(i) Flushing
Raddling
Crutching in female
Ringing in male
Serving at correct age and weight
Correct ram, ewe ratio during tuppping (6x1=6mks)

(c) Leak proof to avoid rain water in the store
Have rodent guards to keep off rodents
Secure to keep off thieves
Rained above the ground to avoid dampness

26. a) -The rate at which given job can be completed is high
- Number of man-days in any activity is reduced/ labour saving
- products harvested mechanically are more uniform and higher quality.
- There will be timeless of operation/ work completed good time
- It leads to high farm productivity
- Enhance uniformity of operations e.g planting, ploughing
- Less laborious/ exhausting/ reduces drudgery

b) - High feed and water requirement.
- Less resistant to common parasites and tropical diseases
- Cannot survive in poor quality pastures.
- Cannot walk long distances.
- Have short legs compared to indigenous hence cannot walk long distance.

c) - May take long to establish.
- Not suitable in sub-dividing land into paddocks.
- May habour pests and predators.
- Creates hiding places for thieves.
- Labour demanding in trimming
- May have shading effect on crops
- May leave some gaps if growth is irregular
- May compete for nutrients with desired crops
- Some may injure both animals and farmer e.g kei apple

27.a) i. Mouth

- Food is chewed to break and increase surface area for enzyme action; food is mixed with saliva which contains salivary amylase to lubricate the food; salivary amylase converts starch to maltose (1 mark)

ii) Stomach; Food is mixed with gastric juice; (3 marks)

- Gastric juice contains HCL, pepsin, and rennin
- -HCL provides optimum PH for enzymes; Pepsin breaks down proteins to peptides; Rennin coagulates milk to increase the surface for enzyme action

iii) Small intestines ;-In the duodenum food is mixed with bile and pancreatic juice; Bile emulsifies fats to increase the surface area for enzyme action/as salt to neutralize acid from stomach; Pancreatic amylase coverts starch to maltose; Pancreatic lipase converts fats to glycerol and fat acid; Trypsin convert s proteins to peptones and peptides; In the rest of the small intestines food is mixed with intestinal juices(peptidase, maltase, sucrase/ invertase and lactase enzymes); Peptidase converts peptones and peptides to amino-acids; maltase converts maltose to glucose; Sucrase (invertase) converts sucrose to glucose and galactose. Digested food materials are absorbed in the ileum; Undigested and indigested food materials move to the large intestines for excretion (5 marks)
iv. Caecum- the none ruminants have a large caecum which is equipped with micro-organisms for digesting cellulose. (1 mark)

b) i. Functions of worker bees

- Collect nectar and pollen grains gums, resin and water for making honey
- Protect the colony form intruders
- Feeds the queen, young bees and drone
- Cleans the colony/comb, removing dead bees
- Scouts for a new home when necessary
- Making honey and beeswax

ii. Harvesting honey procedure
Wear protective clothing like overalls, gumboots, veiled hat/cap and carry beehive tool, insecticide for emergency and appropriate container, smoker; Approach the bee hive early in the morning or late evening when bees are less active. Do it quietly; work the smoker and apply smoke into the hive through entrance holes to make bees inactive; Remove the top lid then each comb in turn, scrape the bees and cut the honey comb using bee hive tool. Combs are on top bars; Place the honey comb in a rust proof container leave a small piece (3cm) of honey comb on the loop for continuity; Replace beck the bars and the lid to original position