**443/1**

**AGRICULTURE**

**PAPER 1**

**FORM FOUR**

**MARKING SCHEME**

1. Exotic breeds of dairy goats

- Toggenburg - Jamnapari

- Saanen - Anglo Nubian

2. Advantages of natural method of rearing calves

- Calf takes milk at body temp

- Milk is free from contamination

- Problems of scouring are minimized

- Calf gets adequate milk for its nutritional requirements

3. (a) Sheep

(b) - Cause irritation under heavy infestation

- Damage wool due to scratching

- Results in retarded growth in lambs

- Animals becomes anaemic

4. – Not suitable for paddocking as they occupy a lot of space

- Act as hiding place for vermins and thieves

- Thorny species can injure livestock and human beings

- Take long to establish

- Require regular trimming and gapping hence expensive

- Show irregular growth leaving gaps

5. (i) - Tinsnip (ii) Rip saw (ii) Mortise gauge (iv) Mason’s trowel

6. – Cleaning after use

- Lubricating the adjustable screw

- Replace broken parts

- Tightening loose nuts and screws

- Replace broken parts

- Sharpening plane iron

7. - Restlessness

- Enlargement or swollen vulva

- Clear mucus discharge from vulva.

- Slackening of pelvic muscles

- Full and distended udder

- Thick milk from teats

- Water bag appear just before birth.

8. (i) Mass slaughter: killing all infected animals to prevent spread of disease.

(ii) Proper feeding: makes animal resistant to diseases

controls nutritional diseases

(iii) Quarantine: Prevents introduction or spread of disease from one area to

another.

(iv) Vaccination – Prevents infection of the disease

9. - Absorbs moisture

- Keeps the brooder warm

- Keeps birds busy/scratching

10. - Prevents injury to other animals and human beings

- Prevents destruction of farm structures

- Make the animal beautiful

- To calm the animal

- Enhances economic use of space

- Improves growth rate

11. - Clean cows

- Clean milking shed

- Healthy milking herd

- Clean milking utensils

- Healthy and clean milkman

- Milk filtration, cooling and storage

12. - Poor ventilation of livestock houses

- Age of the animal

- Dampness and chilliness in livestock houses

- Overcrowding

- Effects of diarrhea and other illness

13. - Animal species

- Chemical composition of the feed

- Form in which the food is given to the animal

- Quantity of food present in the digestive system

- Energy to protein ratio in the feed.

14. - Freezing

- Smoking

- Salting

- Sun drying

15. - Harbours vermin

- Catch fire easily

- Require regular maintenance

- Can leak if not well placed

16. - Shortage of food and water in their surrounding

- Outbreak of diseases and parasites

- Damage to brood combs

- Lack of adequate ventilation

- Dampness and bad smells

- Sick or infertile queen

- Overcrowding

**SECTION B**

17. (a)

Maize = 20 x 180 = 120kg

30

Sunflower = 10 x 1180 = 60kg

30

b) - Age of the animal

- Cost of feedstuff

- Type of animal whether ruminant or non-ruminant

- Nutrient requirement of the animal

- Availability of feedstuff

18. (a) Ear notching

(b) 5 + 3 + 2 + 50 + 30 + 20 = 110 (must show the working)

(c) (Any other combination unacceptable)

(d) Prevents sow from crushing the piglets

19. (a) E – There is draught from the side directly opposite where the chicks have

crowded.

F – Its very cold in the brooder chicks crowd around heat source

G – Too much heat making chicks move far away from heat source

(b) To avoid overcrowding at one point which may lead to suffocation.

20. (a) K – alveoli L – gland cistern

(b) Oxytocin Adrenalin

**SECTION C: (40 MARKS)**

21. a) - Wedge/Triangular shaped.

- Big stomach to store more food

- Large well developed udder and teats

- Well set hind quarters to allow room for big udder

- Long thin neck and small head

- Lean body with little flash

- Large milk veins and milk wells

- Straight top line

- Long thin legs

- Prominent pin bones

(b) (i) Regulates body temp

- Transportation of nutrients

- Component of body cells and fluids

- Make cells turgid

- Used in biochemical reactions

- Helps in excretion of waste products

- Forms part of animal products.

(ii) - Produce high power

- Have efficient fuel and oil utilisation

- Performs wide range of farm operations

- Engines are efficiently cooled with water

- Exhaust gases are effectively expelled

22. (a) - Age of the animal: old animals produce milk with low butter fat content

- Stage of lactation: butter fat content is high in the middle phase of lactation

- Completeness of milking: Last drawn milk from udder has higher butter fat content.

- Season of the year: butter fat content increases during cold season.

- Type of food eaten: food rich in roughages is richer in butter fat content.

- Animals health: mastitis reduce butter fat content leading to watery milk

- Breed – Jersey produce milk with more butter fat content

- Physiological condition: Last stage of pregnancy has milk with lower butter content

- Nutrition: Mexican marigold and silage taints milk if fed before milking.

(b) - Wrong timing of service

- Low quality/expired semen

- Poor skilled veterinary officer

- Infertile cow

- Blocked fallopian tubes/oviduct

- Hormonal imbalance

- Disease infection e.g. brucellosis

(c) - Cost of the material

- Durability

- Workability

- Toxicity of materials to workers/animal

- Farmers taste and preferences

- Type of zero-grazing unit

- Availability of skilled labour

- Capital available

- Suitability

- Environmental conditions

23. (a) (i) Cows/Nannies/sows that have recently given birth

(ii) Low calcium levels in blood leading to increase in magnesium and sugar levels.

(iii) – Muscular twitching causing animals to tremble

- Staggering as the animal moves

- Animal lies down on its side and whole body stiffens/neck twisted

- Body functions eg urination stops

- Stomach contents drawn to the mouth

- Complete loss of appetite/anorexia

- Dullness

- Animal falls down and becomes unconscious

(iv) Control

- Partial milking for first 10 days

- Intravenous injection with calcium salts

- Feed the animal with diet rich in calcium and phosphorus

- Giving high doses of vitamin D

(b) AI

- Semen of a bull can be used even after its death

- Heavy bulls can produce semen to serve

- Controls breeding diseases

- Prevents inbreeding

- Eliminates dangerous bulls in the farm

- Useful as a research tool

- Easier and cheaper to transport semen that a bull

- Quicker method to obtain a proven sire

- Semen from one superior bull can serve many cows

- Saves costs of rearing a bull

- Controls breeding