**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