K.C.S.E 2008 AGRICULTURE PAPER 2 (443/2)
MARKING SCHEME

1. - Ambient temperature / humidity.
   - Level of production / amount of work done by the livestock.
   - Species of the livestock / breed / type of animal.
   - Weight / size / age of livestock.
   - Physiological status, for example :- health and pregnancy.
   - Type of feed taken by the livestock. ($4 \times \frac{1}{2} = 2$ marks)

2. - Active ingredients of acaricide / ability to kill ticks.
   - Persistence of the acaricide / stability of the acaricide / ability to remain effective after fouling with hair, mud, dung and dirt.
   - Concentration of the acaricide in the mixture / dilution.
   - Weather condition during application.
   - Thoroughness / skill of application / method of application. ($3 \times \frac{1}{2} = 1\frac{1}{2}$ marks)

3. - Angora goat. ($\frac{1}{2}$ mark)

4. - **Homogenization** is the mechanical breakdown of large fat globules in milk into smaller fat particles which are then evenly distributed in milk, while **Pasteurization** is the heating of milk to a certain temperature followed by chilling in order to kill harmful bacteria that spoil the milk. ($1 \times 1 = 1$ mark)

5. - Wire strainer
   - Monkey strainer ($1 \times \frac{1}{2} = \frac{1}{2}$ mark)

6. - Driving wedges in when splitting wood.
   - Braking / crushing big stones / Demolishing farm structures. ($1 \times \frac{1}{2} = \frac{1}{2}$ mark)

7. The application of antibiotics into the teat canals of the cow's udder after drying off the cow to prevent mastitis / bacteria infection. ($1 \times 1 = 1$ mark)

8. Increased vigour and performance as a result of crossing two unrelated breed. ($1 \times 1 = 1$ mark)

9. - Age of the equipment.
   - Wear and tear / use.
   - Lack of maintenance practice.
   - Exposure to weather / improper storage.
   - Wrong use of the equipment.
   - Obsolescence / change in technology. ($4 \times \frac{1}{2} = 2$ marks)

10. For the attachment of trailed implement. (1 × ½ = ½ mark)

11. - The oil bath air cleaner / wet air cleaner.
    - The dry type air cleaner. (2 × ½ = 1mark)

12. - To prevent the germinal disc from sticking on the egg shell which may lead to death of the embryo.
    - To make sure warmth is distributed evenly around the egg for uniform embryotonic development. (1 × ½ = ½ mark)

13. Caecum (1 × ½ = ½ mark)

14. - Reinforcing with concrete.
    - Cutting the top of posts at a slope.
    - Covering the top of posts with metal plate.
    - Charring / sling burning of posts.
    - Applying wood preservatives scopper sulphate, cresole, pentach.
    - Painting.
    - Apply old engine oil.
    - Seasoning / propen diedrin / sodium dicronate drying tarnex. (2marks)

15. - Spray race
    - Footbath
    - Housing / shed
    - Fences
    - Crush
    - Plunge dip. (4 × ½ = 2marks)

16. **Mothering ability** refers to that ability of the dam (mother) to take care of the offspring until weaning whereas **Prolificacy** is the ability of the female animal to give birth to many offspring at the same time, for example: - a litter (1 × 1 = 1 mark)

17. - Zygote implantation is facilitated.
    - Facilitates production of more ova.
    - Increases conception rate.
    - Increases lambing percentage / encourages multiple births in ewes. (1 mark)

18. - It is used for cooking.
    - Facilitates production of more ova.
    - Increase conception rate.
    - Increase lambing percentage / encourages multiple births in ewes.
    (3 × ½ = 1½ marks)

19. Birna virus / virus (½ mark)

20. a) By restricting animal movements and their products from and into the affected areas in the event of an outbreak of a notifiable disease thus preventing the spread of the disease. (1 × 1 = 1 mark)

b) By preventing the occurrence of the disease using preventive drugs. (1 mark)

21.
- To avoid deficiency diseases.
- Make the animal robust / strong enough to be able to resist disease attack.

(2 × ½ = 1 mark)

22.
- Age of animal: - older animals are more prone.
- Stage of lactation period:- more prone at the beginning and also at the end.
- Udder attachment / large penclulous udders are more prone.
- Incomplete milking.
- Mechanical injury on the teats.
- Poor sanitation.
- Poor milking technique. (4 × ½ = 2 marks)

23.
- Cause irritation.
- Damage the wool (due to scratching / lower quality of wool).
- Cause retarded growth.
- Cause anaemia.
- Bites and injuring the skin / create wounds. (2 × 1 = 2 marks)

24. a) Landrace (1 mark)

b) Hereford (1 mark)

25. a) - **B1:**-Milk secretory cells / alveoli cells / lactiferous alveoli.

B2:-Milk duct / mammary duct / lactiferous duct.

B3:-Gland cistern / milk / lactiferous sinus. (3 marks)

b) - For milk secretion.
- For milk synthesis. (1 mark)

26. a)

Diagram C

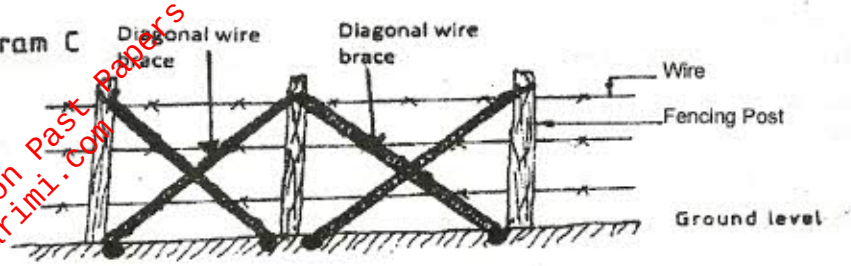
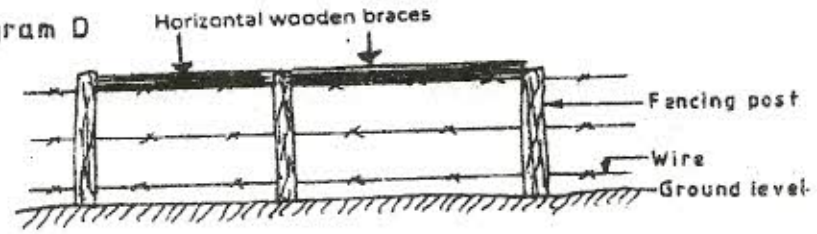


Diagram D



(2 marks)

b) i)
E : - Cannula
F: - Trocar (1 mark)

ii) Used to relieve bloat in animals / accumulation of gases in rumen.
(1 × ½ = ½ mark)

iii)
- Both equipment are inserted at the apex of the enlarged area, on the left side of the animal / plate/ sublumbar renion.
- The trocar is then withdrawn while holding the cannula until the bulk of the gas escapes.
- Remove the cannula there after. (2 marks)

27. a) **G**:- Fan
H : - Fin / Radiator Fins.
J : - Head tank.
K: - Thermostat (2 marks)

b) - **G (Fan)** : - Used for blowing cool air current through the fins to assist in cooling hot water coming from the engine block as it moves to the head tank for further circulation.
- **J (Head tank)** - Holding / storing water for the cooling system.
- **K (Thermostat)**: - Used for regulation of the temperature of water in the engine.

28. a) - **Stage 1**: -The eggs on the ground hatch into larvae which emerge and climb onto the host and feed on blood.
- **Stage 2**: - The engorged larvae moult into nymphs which emerge and feed on blood.
- **Stage 3**: - The engorged nymphs moult into adult which emerge and feed on blood of host.
- **Stage 4**:- The engorged adults mate and the female drops to the ground.(4 marks)

b) A one-host tick. ($\frac{1}{2}$ mark)

29. a) - Claw hammer : - For driving nails into the wood during construction and removing of nails from wood.
- Tinship: - For cutting sheet metal.
- Pliers: - For cutting wire
- Mallet : - For hitting the chisel when cutting grooves in wood.
- Wood chisel : - For cutting grooves in wood or beveling.
- Jack plane : - For smoothening wood.
- Tape measure / rule:- For measuring lengths of materials to be used.
- Marking gauge : - Marking line on wood.
- Spirit level: - Determine the vertical / horizontal straightness.
- Hand saw / rip saw: - For cutting wood into pieces required.
- Clamp : - For holding pieces of wood together when cutting or joining wood.
- Screw driver : - For driving screws in wood or removing screws from wood.
- Scriber : - For marking lines or metal sheets.
- Try square: - To measure or determine the right angles.

(10 marks)

b) - Cost of the materials to be used.
- Availability of required skills / labour.
- Availability of capital for the kind of material.
- Availability of materials required.
- Environmental conditions such as presence of pests, soil type climate.
- Durability / quality / strength of material.
- Type of the dairy shed - whether temporary or permanent.
- Toxicity of the materials to do the work in question.
- Toxicity of the materials to the animal , for example : - use of non-toxic painting materials like the white wash.
- Workability / applicability of the material.
- Farmers tastes and preferences.

(10 marks)

30. a)
- Ensure the calf suckles the cow within the first 8 hours to get colostrums.
- Feed the calf on colostrums for the first four days.
- Feed the calf 2-3 times per day for the first 4 weeks.
- Introduce the feeding of whole milk / milk substitutes after the 4th day.
- Feed the calf on correct amount of milk up to weaning.
- Feed the calf with warm milk to avoid calf scours / milk should be fed at appropriate temperature and at regular intervals.
- Provide adequate clean water to the calf from the 3rd week.
- Introduce palatable dry feeds such as concentrates / calf pellets / calf pencils and good quality cut grass for the 3rd week.
- Any change in feeding should be done gradually to avoid nutritional disorders.
- Clean equipment should be used for feeding calf.
- Calf should be trained to suck the milk from the bucket / bucket feed.

(10 marks)

b)
- Milking equipment should be clean.
- Clean milking parlour / shed
- The udder should be cleaned before milking.
- The milk man should be clean and healthy.
- The cows should be tested for mastitis before milking.
- Cows with mastitis should be milked last and milk disposed off.
- The milk should be sieved / filtered after milking.
- The milk should be stored in a cool dry place / proper storage.
- Cows should be healthy / check the cows regularly for milk - borne disease.
- The milk should be covered after milking.
- Feeds that can taint milk should be avoided / equipment that can taint milk should be avoided.
- Milk should be cooled immediately to reduce bacterial multiplication.
- Chip hair around udder and flank.

(10 marks)

31. a) i)
- Is used to attach the trailed or mounted implements on a tractor.
- Lower links are hitched to the lower links of the implement.
- The adjustable top link is attached to the top link of the implement.
- The top link lifts the implement through the hydraulic power system when in operation or during transportation.
- The lower links hold the implement in place to provide stability.
- The check prevent the implement from getting into the tractor tyres when the tractor is moving.

(6 marks)

ii)

- PTO is used to transmit power to operate various mounted and stationary implements / the short splined shaft / the tub shaft of the PTO at the rear of the tractor transmits power from the tractor to the implement.
- The extension shaft has a universal joints at both ends which are used for adjusting the distance between the tractor and the implement.
- The short splined shaft at the rear of the tractor is also used for attaching / coupling to the implement.

(4 marks)

b)

- In this system the battery or generator supplies sparks which are required for ignition to take place.
- The ignition coil changes the low voltage from the battery to a high voltage current required in the spark plug in petrol engine.
- The condenser absorbs self induced current in the primary circuit hence preventing the contact breaker points from excessive pitting.
- It stores electric for a short time.
- The condenser passes on the electric current to the distributor which distributes the high voltage current to the spark plugs.
- This causes the spark to occur at each cylinder in the required firing order.
- The contact breakers' function is to interrupt the normal flow of current in the primary circuit.
- An electric spark from the plug then ignites the air - fuel mixture in the cylinder, then the tractor engine starts.

(10 marks)