5.7.2 Agriculture Paper 2 (443/2)

SECTION A (30 marks)

1 Raw materials:

(a) mohair.
(b) wool.
(c) fur.

(3 x ½ = 1½ marks)

2. Reasons for egg candling

- Determine freshness.
- Detect any abnormalities.
- Determine fertilised eggs.
- Determination of chick development

(3 x ½ = 1½ marks)

3. Nutritional diseases

- milk fever/parturient puresis.
- bloat/Ruminal tympany
- Grass tetany/grass staggers

(2 x ½ = 1 marks)

4. Advantages of housing calves singly

- control diseases.
- controls parasites.
- prevents formation of hair balls in the rumen.

(2 x ½ = 1 mark)

5. Features of housing

- well ventilated
- well lit.
- easy to clean.
- free from droughts
- spacious
- leakproof
- proper drainage

(4 x ½ = 2 marks)

6. Fish harvesting methods.

- use of seine nets
- use of scoop net
- draining the pond

(3 x ½ = 1½ marks)

7. Dehorning methods

- Caustic potash stick/potassium hydroxide.
- Dehorning spoon.
- Elastrator and rubber ring.
- Dehorning iron
- Dehorning wire/saw
- Dehorning chemical colloidion

(5 x ½ = 2½ marks

8. (a) capon.
(b) kindling.
(c) Buck/billy.

(3 x ½ = 1½ marks

9. Beef cattle marketing

- Kenya Meat Commission.
- Livestock Marketing Division, Ministry of Livestock Development.
- Local slaughter houses/butcheries
- Licensed stock traders

(3 x ½ = 1½ marks

10. Causes of egg eating

- Presence of broken/soft shelled eggs.
- Inadequate laying nests forcing birds to lay on the floor.
- Bright light in the laying nests.
- Idleness of birds in the house
- Mineral deficiency in feeds
- Prolonged presence of eggs in laying nests.

(4 x ½ = 2 marks

11. Preparation of ewe for mating

- Flushing.
- Crutching.
- Treatment against parasites/diseases

(2 x ½ = 1 marks

12. Reasons for identification

- Selection for breeding.
- Facilitates treatment of sick animals.
- Culling of poor animals.
- Identification for special feeding.
- For record keeping on an animal.
- Identification of lost/stolen animal.

(4 x ½ = 2 marks

13. Advantages of fold system in poultry

- Uniformly spreads manure/dropping in the field.
- Requires less feeding.
- Reduces parasite/disease build up.
- Protects birds from predators.

(3 x ½ = 1½ marks

14. Practices after complete milking

- Teat dipping to control mastitis.
- Weigh and record milk yield.
- Sieve/strain/filter milk.
- Application of milking jelly on teats.
- Store milk in a cool place.
- Clean the milk shed
- Clean the milking equipment
- Release the animal

(4 x ½ = 2 marks)

15. (a) Both bacterial and zoonotic diseases

- Brucellosis.
- Anthrax.

(2 x ½ = 1 marks)

(b) Viral diseases

- Newcastle
- African swine fever

(2 x ½ = 1 marks)

16. Functions of lubrication system in a tractor

- Reduces friction between moving parts.
- Reduces heat produced by rubbing surfaces/cooling effect.
- Cleaning agent
- Prevents rusting.

(3 x ½ = 1½ marks)

17. (a) Isolation and quarantine

Isolation is the separation of infected livestock from the rest of the herd to prevent spread of the disease.
Quarantine is preventing livestock from moving into or out of an area during an outbreak of a notifiable disease.

(mark as a whole 2 marks)

(b) Curative drug and prophylatic drug

- Curative drug is a drug administered when an animal is sick/already infected.
- Prophylactic drug is a routine drug administered to an animal to prevent infection.

(mark as a whole 2 marks)

SECTION B (20 marks)

18. (a) **A** - Hypodermic syringe and needle
(Rej. Hypodermic syringe alone)

B - Soil auger

(2 x 1 = 2 marks)

(b) Straightening bent metal surfaces/riveting/striking head of cold chisel. (1 mark)

(c) Cleaning after use to remove dirt.
Greasing/oiling to reduce friction.
Apply oil/painting to prevent rusting

(2 x 1 = 2 marks)

19. (a) Tsetse fly/*Glossina species*

(1 mark)

(b) Transmits *Trypanosomiasis*/nagana causing agents (1 mark)

(c)
- Bush clearing to destroy breeding sites
- Spraying with insecticides to kill them
- Trapping and killing
- Sterilization of male flies to impair breeding
- Creating a buffer zone between game reserves and livestock areas to isolate them.
- Use of impregnated nets to trap them.

(4 x 1 = 4 marks)

20. (a) Branding

(1 mark)

(b) Reduces quality of hides/skins because the heat damages the skin/hide
Causes the animal a lot of pain because it uses heat
Causes wounds which can result in infections

(3 x 1 = 3 marks)

21. (a) **E** - Footbath

G - Dip tank

(2 x 1 = 2 marks)

(b) **E** - Cleans hooves/controls footroot

F - Forces the animal to slide and plunge into the dip wash

H - Allows the dip wash to drip from the animal and flow back to the dip tank.

(3 x 1 = 3 marks)

SECTION C (40 marks)

22. **(a)**

- Farrowing pen for farrowing and rearing piglets.
- Boar's pen houses the boar and also used for mating.
- Weaners/Fatteners pen houses piglets from weaning to marketing stage
- Gilts pen houses young females upto service age/12 months.
- In-pig pen houses pregnant pigs before they are moved to the farrowing pen.

(4 x 1 = 4 marks)

(b) **Measures for Tapeworms** (*Taenia spp*)

- Use of prophylactic drugs /antihelmintics to deworm
- Rotational grazing/paddocking to starve development stages.
- Burning of infested pastures to destroy developmental stages
- Ploughing infested pastures to destroy developmental stages
- Observe proper hygiene in livestock houses to prevent contamination
- Proper disposal of human excreta to control developmental stages/prevent contamination
- Proper meat inspection to isolate infected meat.
- Proper cooking of meat to kill the cysts.

(6 marks)

(c)

(i) Carbohydrates - main sources of energy. They are respired to release energy e.g. cereals root crops, tubers, molasses, grass pastures,

(ii) Fat and oils - respired to produce energy e.g. oil seeds, animal by-products, pastures/foliage.

(iii) Proteins - growth, repair, production of antibodies, enzymes, hormones and products e.g. seed cakes, leguminous foliage, animal by-products, young green grass.

(iv) Vitamins - protection against infection, promote growth, bone formation, muscular activity, organic catalysts e.g green feeds, sunlight, milk, whole grains.

(v) Minerals - strong bone formation, milk synthesis, formation of hard shelled eggs, prevent mineral deficiency diseases, promote growth e.g. Cereal grains, green vegetables, fish meal, liver meal, salt licks, meat meal.

(vi) Water - transport of food substances, cooling body, easy digestion, excretion.

(Component + role /example - 2 marks x 5 = 10 marks)

23. **(a)** **Rearing of chicks**

- On arrival supply water mixed with glucose.
- Feed chicks on fresh chick mash.
- Clean feeders before feeding/provide adequate clean water.
- Clean waterers before feeding.
- Provide adequate feeders and waterers as per the age.
- Vaccinate chicks against gumboro disease after two weeks.
- Dust the chicks and the brooder with appropriate chemicals to control external parasites.
- Check and adjust the brooder temperature accordingly.
- Provide coccidiostat in water/feed to control coccidiosis.
- Vaccinate chicks against new castle at 3 - 4 weeks - fowl typhoid at

seven weeks age.
- Dim lighting to prevent toe pecking.
- Introduce roosts, grit to chicks from 6th week.
- Gradually introduce grower's mash to the chicks from the 7th week.
- Isolate and treat sick chicks.
- Properly dispose dead chicks.
- Keep proper records.
- Deworm the chicks.
- Debeaking
- Provide adequate feeds.

(12 x 1 = 12 marks)

(b) **Reasons for embryo transfer**

- The calf is born in the local surrounding to minimize effects of climatic changes.
- It is possible to screen and market sexed embryos to minimise the number of male calves.
- It controls sexually transmitted diseases
- Embryos can be stored for a long time awaiting for a recipient female.
- It allows faster multiplication of a superior animal/breed i.e a cow can produce 12 - 15 embryos per year.
- It stimulates production of milk in females that were not ready/able to produce milk.
- Can be used as a study / research tool on a given sire / dam because many offsprings can be produced within a short time for observation.
- It allows the embryo to obtain passive immunity from the surrogate mother.
- The use of embryo saves the cost of production on rearing bulls.
- Embryos are cheaper than animals of equal value.
- Embryo are easy and cheap to transport in test tubes compared to live animals.
- High yielding embryos can be implanted into less valuable females to improve production in the calves obtained.
- Easy to plan for breeding.
- Prevents injury of cows by heavy bulls.

24. (a) **Foot rot disease** (8 x 1 = 8 marks)

(i) Causal organism.

- Bacteria/*Fusiformis necrophorus*/*Fusiformis nodosus*/*Fusiformis* family bacteria.

(1 x 1 = 1 mark)

(ii) **Signs of infection**

- Swollen feet.
- Lameness/pain as the animal walks.
- Pus/rotten smell in the hooves.
- Animal kneels when grazing when fore feet are affected.
- Animal lies down most of the time when hind feet are affected.
- Emaciation because the animal does not eat.

(5 x 1 = 5 marks)

(iii) **Control measures**

- Regular hoof examination and trimming.
- Regular walk through a footbath containing copper sulphate or formalin solution.
- Proper hygiene.
- Isolation of infected animals.
- Treatment of wounds on the feet to prevent predisposal to infection.
- Treatment of infected animals.
- Moving the healthy sheep to dry areas.

(4 x 1 = 4 marks)

(b) Functional differences between a disc plough and a mouldboard plough

(i) Disc plough rolls over obstacles hence good for areas with obstacles e.g. stones, roots, stumps, etc

(ii) Disc plough works better in fields with trash on the surface due to rolling and cutting action of discs.

(iii) Disc plough requires less draught power because of the rolling ability of the discs.

(iv) Mould board plough is rigid hence ploughs at a uniform depth.

(v) Mould board plough completely inverts the soil slices hence good for burying manure into the soil.

(vi) Use of a mould board plough requires fewer secondary operations because it completely inverts soil slices.

(vii) Disc plough can work on any soil condition this allows the farmer to work with it any time.

(5 x 2 = 10 marks)
(Maximum 10 marks)