AGRICULTURE PAPER 2

ANSWERS

KCSE 2010

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Agriculture Paper 2

SECTION A. (30 marks)

1. Casual agent of anaplamosis disease in cattle.
   - Protozoa/*anaplasma marginale/anaplasma spp.*

   (1 x ½ = ½ mark)

2. Materials used in contructing a Kenya Top Bar Hive 9K.T.B.H)
   - Timber
   - Nails
   - Plain wire
   - Iron sheets

   (4 x ½ = 2 marks)

3. (a) Breads of dairy cattle that originated from the channel islands
   - Guernsey
   - Jersey

   (2 x ½ = 1 mark)

   (b) (i) Chinchilla rabbit
   - Grey/silvery

   (1 x ½ = ½ mark)

   (ii) Toggenburg
   - Brown with two white stripes running down the face

   (1 x ½ = ½ mark)

4. Reasons for castration
   - Prevent uncontrolled mating/inbreeding
   - Improve the quality of meat
   - Promote faster grown
   - Make them docile
   - Control breeding diseases

   (4 x ½ = 2 marks)

5. Characteristics of roughages
   - Bulky
   - High fibre content
   - Low nutrient content
   - Low digestibility
   - Mainly of plant origin

   (4 x ½ = 2 marks)

6. Functions of the crop in poultry digestive system
   - Softening/moisturizing food
   - Temporary food storage

   (2 x ½ = 1 mark)

7. Roles of worker bees
   - Rear and nurse the brood
   - Collect nectar to make honey
   - Make honey combs
   - Ventilate the hive
   - Protect the colony
   - Clean the hive

   (4 x ½ = 2 marks)

8. Reasons for controlling livestock diseases
   - Reduces spread of livestock diseases
   - Promote fast growth and early maturity
   - Make them have long productive life
   - Improve quality and safety of products
   - Improve quantity of products
   - Reduce cost of products

   (4 x ½ = 2 marks)

9. Control measures for fowl pox diseases in poultry
   - Observe hygiene in poultry house
   - Regular vaccination
   - Slaughter and properly dispose carcass of affected birds

   (2 x ½ = 1 mark)

10. (a) Shovel
- Mixing mortar/manure
- Lifting soil/manure

(1 x ½ = ½ mark)

(b) Strip cup
- To detect mastitis infection in milk

(1 x ½ = ½ mark)

11. Reasons for maintenance practices
- For safety of the user/operator
- Ensure efficiency of operations
- Increases durability
- Reduces costs on repairs and replacements
- Avoid damage to the mower

(3 x ½ = 1½ marks)

12. Limitations of using solar power
- Solar trapping devices are expensive
- Power supply/trapping fluctuates depending on weather conditions
- Solar trapping is limited to day light
- Requires skilled labour to handle the devices

(3 x ½ = 1½ marks)

13. Importance of thermostat
- Prevents engine from over-heating
- Maintains optimum engine temperature during operation

(1 x 1 = 1 mark)

14. Advantages of a disc plough over a mould board plough
- Discs roll over obstacles
- Requires less draught power
- Requires less maintenance costs
- Works better on dry, hard and sticky soils

(2 x ½ = 1 mark).

15. Tools used when laying concrete blocks during construction of a wall
- Plumb bob/plumb line
- Mason's trowel
- Spirit level
- Wood float

(4 x ½ = 2 marks)

16. Importance of guard rails in a farrowing pen
- Prevents sow from crushing piglets
- Prevents sow from eating creep feeds

(1 x ½ = ½ mark)

17. Reasons for having a foot path in a cattle clip
- Clean the feet of animals
- Control foot rot

(2 x ½ = 1 mark)

18. (a) Crutching and ringing
- Crutching is the cutting of wool around the external reproductive organs of a female sheep to facilitate mating
- Ringing is the cutting of wool around the sheath of the penis in rams to facilitate mating

(Mark as a whole 2 marks)

(b) Cropping and harvesting
- Cropping is the selective removal of fish of marketable size from the pond
- Harvesting is the removal of all the fish from the pond

(Mark as a whole 2 marks)

19. Ways in which infectious diseases can spread
- Through vectors
- Through ingestion of contaminated food and water
- Through contact
- Through inhalation of contaminated air

(3 x ½ = 1½ marks)

SECTION B (20 marks)

20. (a) Causes of chicks' behaviour in the illustrations A, B and C.

A - Presence of draught makes the chicks to crowd on one side of the brooder

B - Cold/inadequate heat makes the chicks to crowd around the head source

C - High/excess heat makes the chicks to move away from the heat source.

(3 x 1 = 3 marks)

(b) Reasons for making brooder wall round in shape

- To discourage overcrowding of chicks at the corners to avoid suffocation

(1 x 1 = 1 mark)

21. (a) **F** - Cervix
H - Oviduct/fallopian tube

(2 x ½ = 1 mark)

(b) Functions of part labelled **G**

- Produces ova/female gametes
- Produces hormones that control ovulation cycle

(2 x 1 = 2 marks)

(c) Role of **J**

- Allows implantation of the zygote and development of the foetus

(1 x 1 = 1 mark)

22. (a) **K** - Beef tapeworm/ *Taenia saginata/Taenia spp*
L - Round worm/ *Ascaris lumbricoides/ Ascaris spp*

(2 x ½ = 1 mark)

(b) Blader worm/ Embryo cyst/ *Cysticircus cellulosae*

(1 x ½ = ½ mark)

(c) Procedure of handling a heifer when administering a liquid deworming drug

- Restrain the heifer in a crush
- Hold it by the nostrils and lift up its head
- Open its mouth
- Release the drug into the mouth as far as possible holding down the tongue
- Hold it to ensure the drug is swallowed

(Mark until the procedure is broken 2½ marks)
(5 x ½ = 2½ mark)

23. (a) Granary/modern store/crib

(1 x ½ = ½ mark)

(b) Functions of **M**

- Prevents entry of rodents into the store

(1 x ½ = ½ mark)

(c) Maintenance practices on the structure

- Repair and replace worn out parts
- Cleaning
- Fumigating/dusting with appropriate pesticides

(2 x ½ = 1 mark)

24. (a) **N** - Tank
P - Delivery hose
Q - Trigger
R - Lance

(4 x ½ = 2 marks)

(b) Functions of S

- Breaks the liquid chemical into desired size of droplets

(1 x 1 = 1 mark)

25. (a) Dairy breed (1 x ½ = ½ mark)

(b) Friesian/ Jersey/ Guernsey/ Ayrshire (1 x ½ = ½ mark)

(c) Physical characteristics of dairy cattle
- Wedge/ triangular shaped
- Straight topline
- Large and well developed udders and teats
- Prominent milk veins
- Lean bodies/ visible pinbones
- Large stomach
- Small head and long neck

(4 x ½ = 2 marks)

SECTION C

26. (a) Advantages of artificial insemination
- Controls breeding diseases
- Controls breeding/inbreeding
- Is a quicker method of obtaining a proven bull
- Is easy and cheap to transport semen to far areas
- Semen from a superior bull can be used to serve many cows
- Farmers who cannot afford to buy a supervisor bull can access the service at a low cost
- Bulls that cannot serve naturally due to physical injuries/defects can be utilized.
- Prevents injuries to cows by heavy bulls
- Danger of injury/damage by aggressive bulls is eliminated
- Semen can be stores for a long period even after death of the bull
- Saves the cost of rearing a bull

(5 x 1 = 5 marks)

(b) Signs of Trypanosomiasis (Nagina) disease in livestock
- General body weakness/dullness
- Reduced milk production
- Swollen lymph nodes
- Rough coat and cracked skin where there is no hair
- Running eyes/lachrymation which can result in blindness
- Diarrhoea
- Emaciation/loss of weight
- Abortion in pregnant females
- High fever/temperature
- Anaemia
- Loss of appetite
- Swollen parts of the belly

(10 x 1 = 10 marks)

(c) Functions of water
- Component of body cells and many body fluids e.g. blood
- Used in biochemical reactions in the body e.g. digestion
- Regulates body temperature through sweating and evaporation
- Excretion of metabolic waste from the body
- Formation of products e.g. milk, eggs, etc.
- Makes cells turgid to maintain their shape

(5 x 1 = 5 marks)

27. (a) Use of the various parts of a zero grazing unit in dairy farming
- Milking stall – restraining cows during milking
- Calf pen – rearing calf to weaning
- Sleeping cubicles – provide shelter and warmth
- Loafing area – dunging, feeding, exercise and sunning
- Feed and water troughs – feeding and watering the animals
- Fee preparation room – preparing fee rations and chopping fodder
- Store – storing/keeping daily equipment

(6 x 1 = 6 marks)

(b) How power transmitted from a tractor engine is made available for use on a farm

(i) Propeller shaft
- Connects gear box to the differential which has wheel axles
- Whel axles rotate to move the tractor and push or pull trailed implements

(2 x 1 = 2 marks)

(ii) Power Take Off (P.T.O) shaft
- Rotates at the same speed as the crankshaft
- Its connected to machines e.g. mowers, sprayers, shellers, etc to perform farm operation

(2 x 1 = 2 marks)

(iii) Hydraulic system
- Is attached to the three-point linkage
- The three-point linkage operates (raises/lowers) the mounted implements during farm operations

(2 x 1 = 2 marks)

(c) Ways in which ticks can be controlled
- Burning infested pastures to kill developmental stages
- Rotational grazing to starve and kill developmental stages
- Hand picking and killing the ticks
- Fencing off pasture land and farm to keep away infested animals
- Ploughing pasture land to burry and kill developmental stages
- Top dressing pasture using lime to kills the ticks
- Spraying using acaricides/hand dressing
- Biological control

(8 x ½ = 8 marks)

28. (a) Characteristics of a poor layer
- Combs and wattles - small/shrunken, dry scaly and pale
- Eyes - dull and pale yellow
- Beak - yellowish in colour
- Abdomen - hard and full
- Vent - round, dry and less active
- Space between keel and Pelvic bone - small and fits only one to two fingers
- Plumage - preened and glossy (smooth)
- Moulting - early moulting
- Shanks - yellowish in colour
- Broodiness - is common

(10 x 1 = 10 marks)

(b) (i) Clean milk
- Free from disease causing micro-organisms
- Free from hair, dirt or dust
- Free from bad odours and tastes
- Chemical composition within expected standards

(3 x 1 = 3 marks)

(ii) Factors influencing milk composition
- Age of the animal
  Butter fat in milk becomes less as an animal grows old thus young animals produce milk with high BF than older animals
- Breed differences
  Different breeds of cattle produce milk with different percentage composition e.g. jersey produces higher BF than Friesian.
- Disease
  Diseases such as mastitis reduce the lactose composition in milk because bacteria attack milk sugars.
- Physiological condition of the animals
  Sick/extremely emaciated animals register low percentage of BF/ during late pregnancy cows produce milk with low BF content.
- Stage of lactation

The BF content in milk is highest at the middle phase of the lactation period and lowers towards end of lactation.

- Completeness of milking/time of milking
  Milk drawn last from udder during milking contains high BF content/ milk produced in the morning has lower BF than milk produced in the evening.
- Season of the year
  BF content increases during cold seasons

(7 x 1 = 7 marks