

K.C.S.E KNEC AGRICULTURE 2011

PAPER 2

SECTION A (30 marks)

Answer all the questions in this section in the spaces provided.

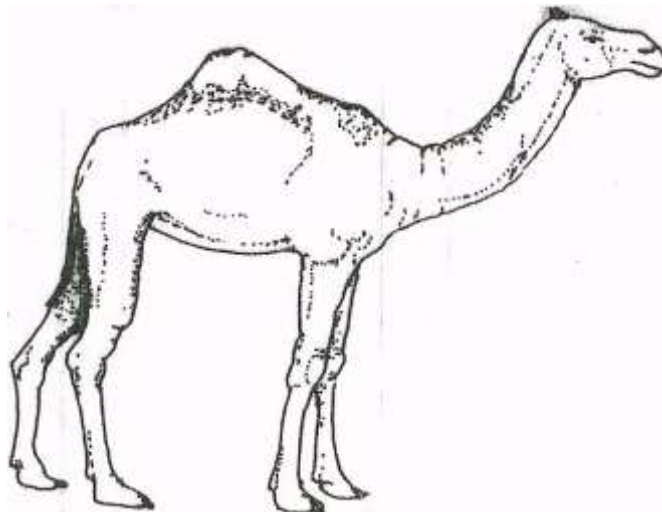
- 1 State **four** maintenance practices for a disc plough. (2 marks)
- 2 Name three methods that are used in selection of breeding stock in livestock production. (1 mark)
- 3 State four advantages of using animals instead of tractors as a source of power on the farm. (2 marks)
- 4 Name one livestock disease that is transmitted by each of the following parasites:
 - (a) blue ticks; (1 mark)
 - (b) brown ear ticks; (1 mark)
5. State **four** methods of controlling round worms (*Ascaris sp*) in livestock. (2 marks)
- 6 Give the meaning of the following terms as used in livestock health:
 - (a) disease; (1 mark)
 - (b) vaccination (1 mark)
- 7 State **three** maintenance practices for a tractor battery (1 marks)
- 8 Name the type of breed into which each of the following breeds of cattle are classified:
 - (a) Aberdeen Angus; (1 mark)
 - (b) Guernsey; (1 mark)
 - (c) Sahiwal; (1 mark)
 - (d) Redpoll. (1 mark)
- 9 Give two ways in which proper nutrition helps to control livestock diseases. (1 mark)
- 10 List **four** categories of livestock diseases. (2 marks)
- 11 Name two breeding systems that can increase the frequency of high milk production genes in indigenous cattle. (1 mark)
- 12 Name **two** bloodless methods of castration in lambs. (1 mark)
- 13 Give the meaning of the following terms as used in livestock breeding:
 - (a) recessive gene; (1 mark)
 - (b) epistasis.
14. State four signs that indicate that a doe is about to kindle. (2 marks)
- 15 Name two developmental stages of a liverfluke (*Fasciola sp.*) which occur in the fresh water snail (*Limnaea sp*). (1 mark)
- 16 Name the strokes in a four stroke cycle engine. (2 marks)
- 17 State four signs of mite attack in poultry. (2 marks)
- 18 State three advantages of natural feeding in calf rearing. (1marks)

SECTION B (20 marks)

Answer all the questions in this section in the spaces provided.

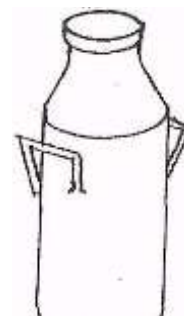
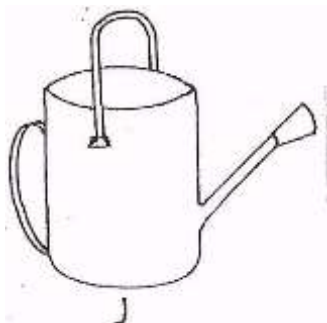
- 19 A dairy farmer is required to prepare 100 kg of dairy meal containing 20% Digestible Crude Protein (D.C.P.). Using the Pearson's Square Method, calculate the quantity of soya bean (40% D.C.P.) and rice (16% D.C.P.) the farmer requires for the dairy meal. (4 marks)

- 20 Below is an illustration of a camel. Study it and answer the questions that follow.



- (a) Identify the camel species illustrated above.
(b) Name **three** products that farmers obtain from the camel species illustrated above. (1 marks)
(c) Give two reasons why the camel species illustrated above is able to survive in its natural habitat. (2 marks)

- 21 The diagram below represents farm tools and equipment. Study them and answer the questions that follow.



K



L

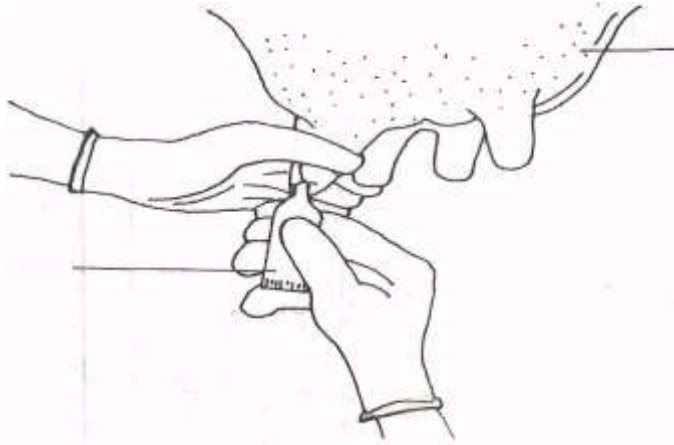
J



M

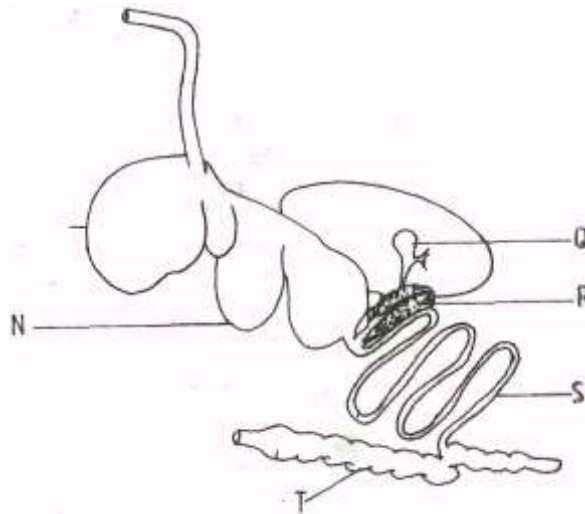
- (a) Identify the tool/equipment labelled J, K and M.
(b) State one use for each of the tool/equipment labelled K and L.
(c) Give **two** maintenance practices for the equipment labelled K. (1 mark)

22 The illustration below shows a practice carried out to prevent mastitis infection in a dairy cow.



- (a) Identify the practice.
- (b) At what stage is the practice carried out?
- (c) State **two** other practices that are carried out on the udder to prevent mastitis infection

23 The diagram below shows the digestive system of cattle. Study it and answer the questions that follow.



- (a) Name the parts labelled N, I and Q.
- (b) State one function for each of the parts labelled S and T. :
- (c) Give **one** enzyme produced by each of the parts labelled R and S.

SECTION C (40 marks)

*Answer any **two** questions from this section in the spaces provided after question 26.*

- 24 (a) Explain the factors considered when culling livestock. (5 marks)
- (b) Describe poultry management under the following sub-headings: (8 marks)
- (i) causes of stress
 - (ii) control measures for cannibalism.
- 25 (a) Describe the feeding practices in artificial rearing of a dairy calf. (7 marks)
- (b) Describe Newcastle disease under the following sub-headings: (10 marks)
- (i) causal organism; (1 mark)
 - (ii) signs of infection; (7 marks)
 - (iii) control measures. (2 marks)
26. (a) Describe the uses of fences on the farm. (10 marks)
- (b) Give **five** harmful effects of liver flukes in sheep rearing. (5 marks)
- (c) State the differences between a diesel engine and a petrol engine. (5 marks)

AGRICULTURE YEAR 2011

PAPER 2 MARKING SCHEMES SECTION A (30 mark)

1. Maintenance practices for a disc plough.

- cleaning after use
- greasing the moving parts,
- painting the frame
- Repair /replace broken/ worn out parts
- Oiling the metal parts on long storage
- Proper storage

2. Selection of breeding stock.

- Progeny testing.
- Mass selection.
- Contemporary comparison.

3. Advantages of using animal power,

- Animals are cheap to acquire.
- Require less skilled labour.
- Can be used on small holdings.
- Are appropriate in very steep areas.

4. (a) Blue ticks - Anaplasmosis
(b) Brown ear ticks - E.C.F
(c) Tsetse flies - Trypanosomiasis (nagana)

5. Control methods for roundworms.

- Use of antihelminthics
- Rotational grazing
- Proper disposal of faeces /hygiene
- Ploughing / burning of pasture

6. (a) Disease

Any deviation or alteration in the state of animal body or its organs/Which interferes with proper performance of its functions

- (b) Vaccination: Is the administration of a weakened or killed disease causing agent into the animal to induce production antibodies for immunity against the disease.

7. Maintenance practices for a battery.

- Topping with distilled water to maintain correct level of electrolyte,
- Cleaning the terminals and smearing them with grease to prevent corrosion
- Tightly fix the battery in a box to prevent spillage and damages
- Regular charging.
- Empty contents and turn it upside down on long storage.
- Should be fitted correctly on the tractor

8.

	Breed	Type
a)	Aberdeen	Beef
b)	Guernsey	Dairy
c)	Sahiwal	Dual purpose
d)	Red poll	Dual purpose

9. Proper nutrition

- Prevents nutrient deficiency diseases.
- Ensures resistance against disease infection.

10. Categories of livestock diseases

- Bacterial
- Protozoan
- Viral
- Nutritional

11. Upgrading

Cross breeding.

12. Bloodless castration methods.

Use of rubber ring and elastrator

Use of burdizzo.

13.

- a) Recessive gene: An allele whose phenotypic expression is masked by a dominant allele in heterozygous condition,
- b) Epistasis: Gene interaction in which the expression of some alleles is blocked. (masked)

14. Signs of kindling in a doe.

- Lose of appetite
- Restlessness.
- Nest building
- Plucking of fur from the belly

15. Developmental stages of liver flukes in a fresh water snail.

- Sporocyst
- Cercaria
- Redia.

16. Four strokes of a tractor engine.

- induction/ intake
- compression
- power/ ignition
- exhaust

17. Signs of mite attack in poultry.

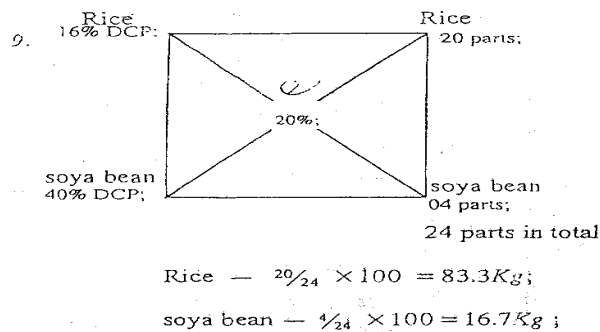
- Irritation/scratching of the body.
- Anaemia.
- Presence of mites below the plumage in patches.
- Falling off of feathers.
- Dermatitis due to burrowing effects.
- Formation of crusts.

18. Advantages of natural feeding in calf rearing.

- Calf takes milk at body temperature
- Milk is free from contamination
- It prevents scouring in calves.
- Milk is provided ad libitum.

SECTION B (20 marks)

19.



20. (a) Dromedary/(Camelus dromedarius)

(b)

- Milk
- Meat
- Transport services
- Hides

(c)

- Withstands/resists high temperature.
- Can stay for along time without food water.
- Can resist tropical diseases.
- Can survive on poor pastures.
- Can walk long distances in search of food arid water.
- Has long eye lashes that prevent
- Has long nose fops that prevent

21. (a) J — watering can.

K — milk churn/milk can.

M — Mason's Trowel.

- (b) K—temporary storage of milk/holding milk during transportation
L—driving nails into wood/removing nails from wood.
- (c)
- cleaning after use.
 - painting with aluminium paint to prevent rusting.
 - repair/replace broken/worn out parts.

22.

- a) Dry cow therapy
b) At the end of drying off.
c) teat dipping
complete milking
proper milking technique
applying milking jelly after milking.

23. (a)

- N—
P— Rumen
Q— Gail bladder
- (b) S— Digestion/absorption of food
T— Absorption of water.
- (c) R— Lipase/Trypsin/amylase
S— Peptidase/maltase/sucrase (invertase)/lactase

SECTION C

24. Factors considered when culling livestock.

- Cull livestock of:
 - Poor health;
 - Old age;
 - Physical deformities;
 - Hereditary defects;
 - Infertility;
 - Poor mothering ability;
 - Poor quality products;
 - Low production;
 - Bad temperament.
 - To avoid inbreeding
- (b) Description of poultry management under:
- (i) Cause of stress.
- Any sudden change in routine
 - Parasite infestations
 - Lack of food and water
 - Strangers and predators in the birds' house,
 - Sudden noise such as passing tractors and thunder.
 - Poor handling of birds during routine practices.

- Overcrowding which leads to competition for space.
- Climatic changes
- Poor lighting in poultry house.
- Inadequate laying nests.
- Disease outbreak

(ii) Control measures for cannibalism:

- Control external parasites.
- Keep birds busy by hanging green leaves or vegetables in the house.
- Feed the birds on a balanced diet.
- Provide adequate floor space.
- Provide adequate laying nests.
- Provide dim lights in the brooder.
- Keep birds as per the age group.
- Debeak hens which peck others.
- Cull perpetual cannibals

25.

a) Feeding Dairy Calf:

- Train the calf to feed from a bucket (bucket feeding).
- Ensure the calf suckles the cow within the first eight hours to get colostrums.
- Feed the calf on colostrum for the for the first 4 days.
- Introduce the feeding of whole milk or milk substitutes after the fourth day.
- Feed the calf 2 - 3 times per day for the-first-4.weeks.
- Feed the calf on the correct amount of milk upto weaning time.
- Provide adequate clean water from the third week.
- Feed the calf with warm milk at regular intervals.
- Introduce palatable dry feeds such as concentrates (calf pellets) and good quality cut grass from the third week.
- Provide mineral supplements or licks.
- Any change in feeding should be done gradually to avoid nutritional disorders

b) Newcastle disease.

- Casual organisms.
- virus.

(ii) Signs of attack:

- Difficult in breathing.
- Beaks remain wide open and necks are strained
- Dullness,
- Birds stand with eyes closed all the time.
- Loss of appetite.
- Nasal discharge which force the birds to shake their heads to clear it.
- Birds walk in a staggering motion since the nervous system is affected
- Often the bird have their heads and wings drooping..
- Birds produce watery greenish diarrhea.

- Eggs laid have soft shells.

(iii) Control Measures:

- Vaccination during the first six weeks and then two to three months later.
- Quarantine.
- Kill the infected birds and burn them.
- Obtain stock from reputable source

(a) Use of fences in the farm!

- Mark boundaries.
- Help to avoid boundary dispute
- Keep off wild animals and intruders from outside the farm/ security
- Enable the farmer to practice mixed farming.
- Facilitates rotational grazing
- Controls movement of animals and people preventing formation of unnecessary paths in the farm
- Control the spread of parasites and diseases by keeping off wild and stray animals from the farm
- Help the farmer to isolate or confine animals requiring special attention.
- Enable the farmer to control breeding by rearing different animals in different paddocks.
- Hedges act as wind breakers.
- Adds beauty to the farm.
- Add value.
- For privacy.

(b) Harmful effects of liver flukes in sheep

- Digestive upsets due to blocking of bile duct.
- Emaciation/ recumbency leading to death
- Anaemia due to sucking to blood
- Swollen lower jaw/ oedema in the jaw
- Swollen abdomen
- Destruction of old tissues

Differences between Petrol and Diesel Engine

Diesel Engine	Petrol Engine
Use diesel	Uses petrol
Ignited by compression	Ignited by spark plugs
Compression ratio is high	Compression ratio is low
Less efficient in fuel burning	More efficient in fuel burning
Only air is compressed	Air – fuel mixture is compressed
Has injector pump	Has a carburetor