

NAMEDATE

ADM NO. CANDATES SIGNITURE.....

443/2

AGRICULTURE

PAPER 2 (THEORY)

TIME: 2 HOURS

SULIMO JOINT EXAM

AGRICULTURE

PAPER 2 (THEORY)

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the spaces provided above.
2. This paper has **THREE** sections: A , B and C
3. Answer **ALL** the questions in section A and B and any **TWO** questions in section C
4. **ALL** answers **MUST** be written in the spaces provided.
5. Do not remove any pages from this booklet.
6. This paper consists of 10 printed pages. Candidates should check to ensure that all pages are printed as indicated and no questions are missing

FOR EXAMINER'S USE ONLY

	Questions	Maximum score	Candidate's score
A	01 - 18	30 marks	
B	19 - 22	20 marks	
C	23 - 25	40 marks	
Total score		90	

SECTION A (30 Marks)

Answer all questions in this section in the spaces provided.

1. Name two dairy goats breeds reared in Kenya.

(1 Mark)

Toggenburg
Saanen
Anglo-Nubian
Jamnapari

2. Give two reasons why Jersey breed of cattle are better suited to arid areas than Friesians cattle.

(1 Mark)

- Requires less feed/pasture/water
- Can feed on low quality pastures
- Tolerant to high temperatures

3. State two maintenance practices of milking equipments.

(1 Mark)

- Wash and sterilise after use/milking
- Store them in a dry place/store/proper storage
- Replace broken handles or lost parts

4. State FOUR factors that may influence the amount of water intake by a farm animal (2mks)

- Ambient temperature/environmental temperature
- Level of production
- Amount of work
- Species of animal
- Weight of the animal/body weight

- Type of feed eaten by the animal

5. State four advantages of treating timber before construction.

(2 Marks)

- To prevent pest/insect attack
- To prevent rotting due to fungal attack
- To prevent cracking
- To prevent warping/bending
- To improve durability/last longer

6. Give three ways of stimulating milk let down in a dairy cow.

(1½ Marks)

Marks)

- Presence of the calf
- Regular milking routine
- ~~See~~ Washing/massaging of the udder by warm water
- Sight of feed/feeding the animal
- Making familiar sound

7. List four functions of calcium in dairy cows.

(2 Marks)

- Prevents milk fever
- Important in milk synthesis
- Important in bone & teeth formation
- Proper functioning of the nervous system

8. Name two practices aimed at keeping birds busy in a deep litter system.

(1 Mark)

- Throwing grains on the litter in the house
- Hanging green vegetables in the house

9. Give four symptoms of mastitis visible on the black plate in a strip cup.

(2 Marks)

- Presence of pus in milk
- Presence of blood stains in milk
- Presence of clots in milk
- Watery milk

10. State any four signs of parturition in a cow.

(2 Marks)

- Restlessness
- Thick milky fluid from the teats
- Enlarged/swollen vulva
- Clear mucous discharge from the vulva
- ~~State~~ Slackening/Relaxing of pelvic muscles
- Full distended udder

11. Name two points of attachment of the tractor drawn implements.

(1 Mark)

- Drawbar (one-point hitch attachment)
- Hydraulic system
- Three point hitch attachment

12. Outline four importance of the lubrication system in a tractor.

(2 Marks) (2mks)

- Irritation
- Anaemia
- Wounds/damage on the skin
- Ruffled feathers / damaged feathers
- Retarded growth

13. a) List two farm structures which would assist to control livestock parasites.

(1 Mark)

- Dips
- Crushes
- Spray races

b) State four structural requirements of a rabbit hutch.

(2 Marks)

- Floor— Should be slatted or made of wire mesh / concrete made
- SPACIOUS
- Well ventilated
- Should be leak proof

14. State four signs of stress in a flock of chicken.

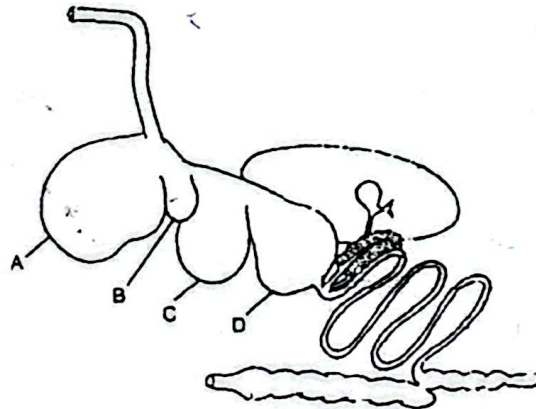
(2 Marks)

- Any Sudden Change e.g. Change of feed
- Presence of Strangers and Predators
- Handling of birds e.g. during vaccination
- Sudden noise
- Sudden Change of weather
- Diseases and parasites
- Lack of food

SECTION B (20 MARKS)

Answer all questions in this section

19. The following is an illustration of the digestive system of a ruminant.



(a) Name the parts labelled A, B, C and D.

(2 marks)

A - Rumen.

B - Reticulum.

C - Omasum.

D - Abomasum.

(b) Name the part of the system where microbial activity takes place.

(1 mark)

Rumen.

(c) State two microbial activities that take place in the part named in (b) above.

(2 marks)

✓ Breakdown of carbohydrates and cellulose.

✓ Synthesis of amino acids.

✓ Breakdown of proteins.

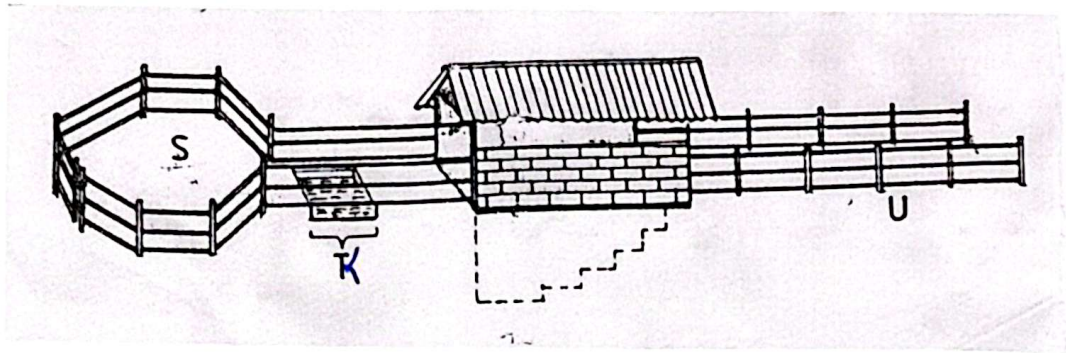
✓ Synthesis of vitamin K.

20. The diagram below shows a plunge dip.

J

K

L



a) State one use of each of the parts of the dip labeled *S* and *K* (3 marks)

S Holding yard / Collecting yard.
K Foot bath.

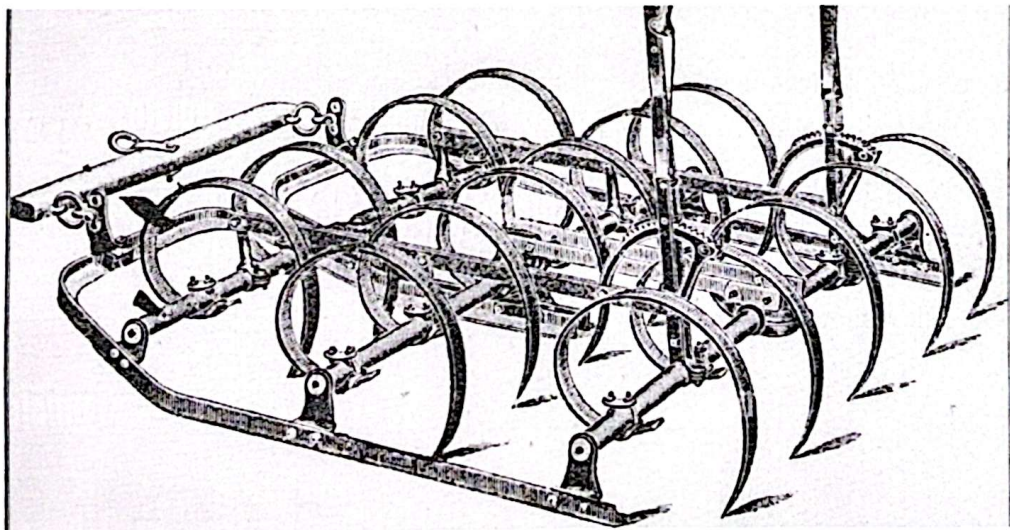
b) State two precautions a farmer should take on the dip wash to ensure effective dipping. (2 marks)

✓ Mix the dip wash properly.
 ✓ Check the dip wash concentration.
 ✓ Top-up the dip wash level.

c) State two uses of the roof of the dip. (1 mark)

✓ prevents evaporation of the dip wash.
 ✓ prevents dilution of dip wash.

21. The diagram below shows a tractor drawn implement.



(a) Identify the implement.

Spring-tined harrow.

(1 mk)

b) Give two uses of the implement above

✓ Levelling the field, Breaking soil clods, Burying trash, ✓ Aeration of soil ✓ Removing weeds,

c) State two maintenance practices carried out on the above implement.

(2mks)

✓ Clean after use.

✓ Straighten spikes when crooked.

✓ Replace worn out tines.

✓ Tighten loose nuts and bolts.

✓ Apply old engine oil for long storage.



State three control measures of the parasite labeled F in livestock production. (1½mks)

22. The diagram below illustrates a calf rearing practice.



a) Identify the practice illustrated above. (½ mk)

Bucket feeding

b)i) Describe the procedure followed in the feeding practice named in (a) above.

(2 ½ mks)

- ✓ put clean milk in a clean bucket.
- ✓ place index finger into the calf's mouth.
- ✓ The calf starts sucking.
- ✓ Lower the finger slowly until it is submerged in milk as the calf sucks.
- ✓ slowly withdraw the finger while the calf is sucking.
- ✓ Repeat the steps until the calf starts to drink.

ii) Give two precautions taken while using the rearing practice stated in (a) above. (1mk)

- ✓ Ensure milk is of correct temperature.
- ✓ High level of hygiene be maintained.

SECTION C (40MARKS)

Answer two questions in this section

23a) Describe the difference between diesel and petrol engines

(5mks)

b) Explain the factors one would consider to ensure fast and effective cultivation by oxen.

(5mks)

(c) Explain seven management practices carried out to ensure maximum harvest of fish.

(5mks)

- d) State five disadvantages of natural mating
~~State five characteristics used to cull out poor layers from the flock in poultry production.~~ (5mks)

24a) Describe the management of day old chicks in a deep litter system from preparation of brooder up to ~~eight~~ ^{eight} ~~(8)~~ weeks old
 (10mks)

(b) Describe Coccidiosis disease under the following sub- headings.

- Animals attacked (2mks)
- Causal organism (1mk)
- Symptoms (4mks)
- Control measures (3mks)

25a) Maintenance practices on a wheel barrow
~~State the factors that influence the power output of farm animals~~ (4mks)

~~(b) State the four cycles a four stroke cycle engine~~ (6mks)

~~(a) State the importance of farm fences~~

~~(b) Importance of fence~~

~~(c) Describe the working mechanisms of four stroke cycle engine.~~ Describe the life cycle of two-host tick. (6)

(10 mks)

23 (a) Petrol Engine	Diesel Engine
✓ Has a carburetor for mixing petrol and air	Has injector pump for injecting fuel into the cylinder
✓ Has spark plug	Does not have
✓ Fuel is ignited by electric spark	✓ Fuel is ignited by compression
✓ Uses petrol as fuel (Highly inflammable)	Uses diesel (less inflammable fuel)
✓ Light in weight	✓ Heavier in weight
✓ Low compression ratio	High compression ratio

(b) Factors to consider for effective cultivation by oxen

- ✓ Proper feeding
- ✓ Proper harnessing
- ✓ Training

- ✓ Provision of right size of yolk
- ✓ Proper timing to avoid harsh condition

1c) Management practices in a fish pond.

- ✓ Cleaning of the pond.
- ✓ Fencing to prevent predators.
- ✓ Manuring of the pond for growth of planktons.
- ✓ Maintenance of the water level.
- ✓ Proper feeding / supplementary feeding.

1d) Natural Mating (disadvantages)

- High chances of inbreeding.
- Transmission of sexual diseases.
- Male need extra feed.
- A lot of semen is wasted.
- Large bulls injure small females.

24(a) Management of ^{one} Old chicks to 8 wks

- Fed with chick mash.
- Cleaning ~~with~~ ^{the} feeders.
- Vaccinated against Gumboro disease after 8 wks.
- New-castle after 3-4 wks and Fowl Typhoid (7 wks).
- Control of coccidiosis through water and feed.
- Dusting to control external parasites.
- Introduction of roosts and for chicks to perch.
- Grit is given to help ⁱⁿ digestion.
- 7th wk - growers mash is given gradually mixed with chick ^{mash}.
- Chick mash is reduced while growers mash is increased.
- 8th wk - removal from brooder.

(b) Coccidiosis

Animal Attacked - Poultry, young rabbits, kids and lambs.

Causal organism -

Protozoan ^{called} Coccidia ^{or} Eimeria sp.

- (13) Symptoms
- ✓ Diarrhoea
 - ✓ Dysentery or blood in the dung
 - ✓ Emaciation
 - ✓ Sudden death
 - ✓ Ruffled feathers
 - ✓ Birds are dull with drooping wings

- (14) Control
- ✓ Use coccidiostats
 - ✓ Isolation of infected animals
 - ✓ Avoid wet and wet unhygienic environments
 - ✓ Cattle should drink from different water points

(25) Maintenance of wheel barrow

- ✓ Tighten loose nuts and bolts
- ✓ Grease the wheel
- ✓ Oil metallic parts
- ✓ Proper storage
- ✓ Repair worn out parts

(b) Fences

- ✓ Boundary (mark)
- ✓ Control movement of livestock and human
- ✓ Security
- ✓ Live fences ^(some) can be used as livestock feed
- ✓ Prevent intruders

(c) Four stroke cycle

- | | |
|---------------|-----------|
| ① Induction | ③ Power |
| ② Compression | ④ Exhaust |

(c) 2-HOST TICK → Eggs on the ground hatch to larvae

- (d) Life cycle of two-host tick
- ✓ Larvae climb onto first host
 - ✓ Larvae attach to first host, feed on blood, become engorged
 - ✓ Larvae moult into nymph on first host, feed on blood and become engorged
 - ✓ Engorged nymph drops to ground and moult to adult
 - ✓ Adult suck blood on second host and female
 - female drops to the ground to lay eggs

15. State four major characteristics of succulent roughages.

(2 Marks)

High moisture content
High fibre content
High carbohydrate content
Low protein content

16. Name the farm tool and equipment used for the practices mentioned below.

(2 Marks)

i) Deworming livestock orally using tablets.

Dosing gun / Bolus gun

ii) Cutting off wolf-teeth in piglets.

Tooth clipper

iii) Weighing farm produce and inputs.

Weighing balance

iv) Measuring distances and lengths.

Tape measure

17. List two advantages of outbreeding.

(1 Mark)

To introduce new genes into existing breed
To establish a new breed
To exploit hybrid vigour

18. List down three roofing materials commonly used by farmers.

(1½ Mark)

Corrugated iron sheets
Thatch
Tiles