

443/2

AGRICULTURE

Paper 2

(THEORY)

2 Hours

Name Index Number

Candidate's Signature Date

Instructions to Candidates

- a) Write your name and index number in the spaces provided above*
- b) This paper consists of three sections: A, B and C*
- c) Answer all the questions in sections A and B*
- d) Answer any two questions in section C*
- e) Candidates should answer all the questions in English*

For Examiner's Use Only

Section	Questions	Maximum score	Candidate's score
A	1- 17	30	
B	18 - 22	20	
C		20	
		20	
Total Score		90	

SECTION A (30 MARKS)

Answer all questions in this section

1. State the class of each of the following feedstuff (1 mk)
 - i. Molasses
 - ii. Macliek
2. State one way by which each of the following practices help in disease control (2 mks)
 - a. Proper feeding
.....
.....
.....
 - b. Proper housing
.....
.....
.....
3. Name a disease in cattle that may be spread through breeding (1 mk)
.....
4. Name two implements that may be connected to power take off shaft of a tractor (1 mk)
.....
.....
5. Differentiate between the following tools (2 mks)
 - a. Marking gauge and mortise gauge
.....
.....
.....
 - b. A cold chisel and a wood chisel
.....
.....
.....
6. Study the table below and fill in the missing words (2 mks)

Description	Cattle	Pigs	Poultry
Young from birth/ hatching			Chick
Young female before parturition / laying		Gilt	

7. Name one intermediate host for each of the following parasites (1 mk)

a. Liverfluke (*Fasciola* spp)

.....

b. Tapeworm (*Taenia* spp)

.....

8. State four ways of restraining cattle during routine management (2 mks)

.....
.....
.....
.....
.....

9. A deep litter poultry house measures 9m by 3m. Suppose the amount of space allowed for one bird is 0.27m^2 , calculate the number of birds that can be kept comfortable in the house.

Show your working (2 mks)

.....
.....
.....
.....
.....

10. State four predisposing factors of mastitis (2 mks)

.....
.....
.....
.....

11. Name any two hormones associated with milk let down in cattle (1 mk)

.....
.....

12. State two reasons under which would make it necessary to feed bees (1 mk)

.....
.....

13. State three effects of tsetsefly infestation (3 mks)

.....
.....
.....
.....
.....

14. Give one reason for packing eggs with the broadside facing upwards in an egg tray (1 mk)

.....
.....

15. List four strokes in a four stroke cycle engine (2 mks)

.....
.....
.....
.....

16. State four reasons why feeding of colostrum is important in rearing of piglets (2 mks)

.....
.....
.....
.....

17. List two factors associated to the animal that determines the amount of feeds taken by animals (2 mks)

.....
.....
.....

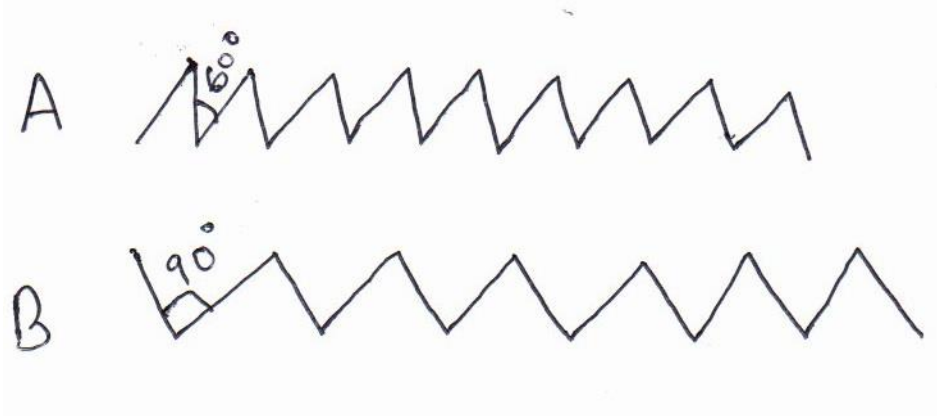
18. Give two signs that would show that a doe is just about to give birth (2 mks)

.....
.....
.....

SECTION B (20 MARKS)

Answer all questions in this section

19. The diagrams labelled A and B below shows the teeth arrangement in hand workshop tools.



- a. Identify the tools represented with the teeth arrangements A and B (2 mks)

A.....

B.....

- b. Give one function of each the tools mentioned above (1 mk)

A.....

B.....

- c. Give two management practices done on the above tools (2 mks)

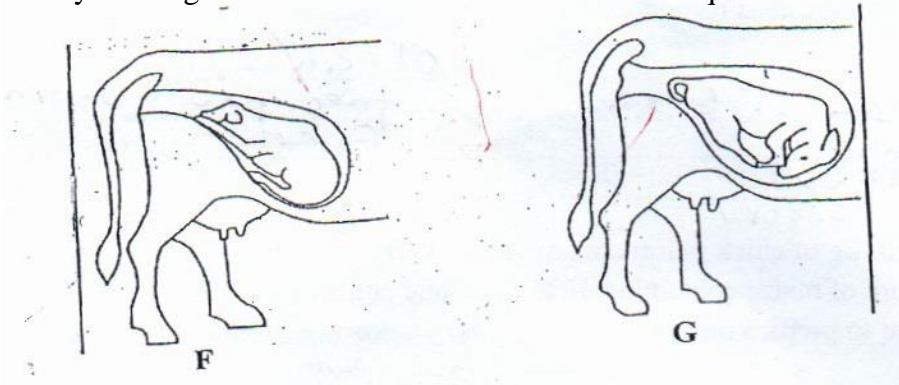
.....

.....

.....

.....

20. Study the diagram below and use them to answer the questions that follow.

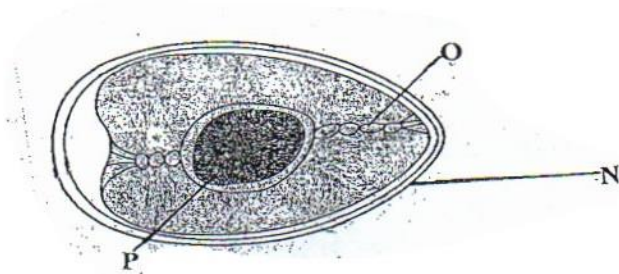


- a. Which of the foetus is in the correct position of parturition (1 mk)

- b. Name the type of parturition for foetus F and G (2 mks)

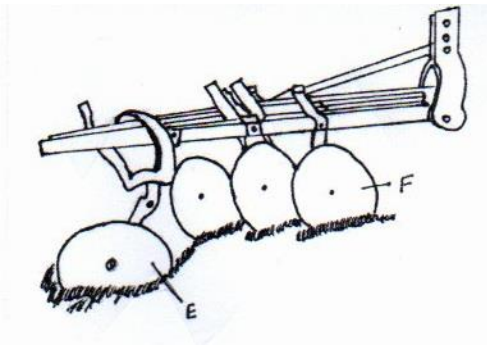
- c. Give two problems associated with parturition in cattle (2 mks)

21. Study the diagram of an egg below and answer the questions that follow.



- a. Name the parts labelled (3 mks)
 O.
 N.....
 P.....
- b. State the functions of parts labelled (2 mks)
 O
 N.....

22. The diagram below represents a tractor implement.



- i. Identify the implement (1 mk)
.....
- ii. Name the parts labelled E and G
E 1mk
G 1mk
- iii. State 2 maintenance practices carried out on the implement shown in the diagram
(2 mks)

.....
.....
.....
.....
.....
.....
.....

SECTION C (40 MARKS)

Answer only two questions in this section.

- 23.
- a. Explain factors to consider when siting farm structures (5 mks)

 - b. Describe foot rot disease in sheep under the following subheadings
 - i. Symptoms (4 mks)
 - ii. Control measures (6 mks)
 - c. State the disadvantages of using animal power on the farm (5 mks)
24. .
- a. Describe the components of a spray race (5 mks)
 - b. Describe the characteristics which will be considered when selecting a gilt for breeding (5 mks)
 - c. Discuss the maintenance practices carried out on a tractor (10 mks)
25. .
- a. Describe the procedure of honey harvesting in a Kenya top bee hive
 - b. Describe the digestion in the rumen in a ruminant animal (5 mks)

 - c. Discuss the factors that influence output of fish in a fish pond (5 mks)
 - d. Mention five precautions taken when using workshop tools. (5 mks)

MARKING SCHEME

SECTION A

1.
 - i. Mollases – carbohydrates – ½ mk
 - ii. Maclick – minerals – ½ mk
2. .
 - a. Proper feeding – to make them strong to resist disease attack
 - Avoid deficiency diseases
 - 1 x 1 = 1mk
 - b. Proper housing – reduces dampness which can result into pneumonia and navel ill
 - Reduces draught which can result into pneumonia
 - Allows easy cleaning
 - Allows in sunlight, hence animals get Vit. D
 - 1 x 1 = 1mk
3. Diseases spread through breeding
 - Brucellosis
 - Campylobacteriosis
 - Vibriosis
 - Trichonomiasis
 - 1x1 = 1mk
4. – mowers
 - Planters
 - Rotavators
 - Sprayers
 - Fertilizer
 - 2x2 = (1 mk)
5. .
 - a. Marking gauge – used to mark parallel lines to the edge of the stock
Mortise gauge – used to mark two parallel lines at the edge of the stock
1x1 = 1mk
A cold chisel – used in cutting thick sheets of metal
Wood chisel – used to cut grooves & chopping off rough wood surfaces in joinery work.
1x1 = 1mk
NB: Mark as a whole = 1mk

6. .

Cattle	Pigs	Poultry
<i>Calf</i>	<i>Piglet</i>	Chick
<i>Heifer</i>	Gilt	<i>Pullet</i>

7. .

- a. Fresh water snail – ½ mk
- b. Pig or cattle – ½ mk

8. .

- Bull ring and lead stick
- Tethering
- Crush
- Head yoke
- 4x ½ = 2mks

9. Number of birds = $\frac{\text{area}}{\text{space/bird}}$

$$\frac{9 \times 3}{0.27} = \frac{27\text{m}^2}{0.27} \quad 1\text{mk}$$

$$= 100 \text{ birds} \quad 1\text{mk}$$

10. Predisposing factors of mastitis

- Age
- Stage of lactation
- Udder attachment
- Incomplete milking
- Mechanical injuries
- Poor sanitation
- Poor milking technique
- 4 x ½ = 2 mks

11. .

- Oxytocin
- Adrenaline
- 2 x ½ = 1mk

12. .

- To maintain colony
- Encourage multiplication
- To supplement during dry season with syrup

13. Effects of tsetse fly infestation

- Transmit diseases
- Suck blood causing anemia
- Damage skins and hides
- Create wounds for secondary infection

- 4 x ½ = 2mks
14. To allow gaseous exchange

15. .
- Induction
 - Compression
 - Power
 - Exhaust
 - 4 x ½ = 2 mks

16. .
- Highly digestible
 - Highly nutritious
 - Has antibodies which help to resist early disease infection
 - Has laxative effect (cleaning the bowels)
 - Highly palatable
 - 4 x ½ = 2 mks

17. .
- The species of the animal
 - The quantity of feed already present in the digestive system of an animal
 - 2 x 1 = 2 mks

18. .
- Nest building by plucking off hair from her belly
 - Loss of appetite / goes off feed
 - 2 x 1 = 2 mks

SECTION B

19.

(a)

A- Cross cut – 1mk

B- Rip saw – 1mk

(b) A – Cutting across the grain

B – Cutting along the grain

1 x 1 = 1 mk (Mark as a whole)

(c)

- Cleaning

- sharpening teeth

- replacing broken handles / repair

- Teeth setting

- tighten loose nuts & screws

- straighten the blade when bent

- hang the saw properly

- apply oil when storing for long

2 x 1 = 2 mks

20. .

a. F – 1mk

b. F- Normal presentation – 1mk

G – Breach / abnormal presentation (1 mk)

c. – difficult in giving birth (dystocia)

- Retained placenta / after birth

2 x 1 = 2 mks

21. .

a. O – Chalaza

P – Yolk

N – Egg shell

3 x 1 = 3 mks

b. O – Hold the yolk in position

N – Allows gaseous exchange

- Protects the inner content

- 2 x 1 = 2 mks

22. .

- i. Disc plough
- ii. E – rear thrust wheel / furrow wheel
F – Disc / concave discs
- iii. – lubricate the hubs & furrow wheel bearings
 - Clean after work NB: reject washing
 - Repair broken discs
 - Apply oil on unpainted parts to prevent rusting for long storage
 - Tighten loose nuts & bolts
 - Blunt discs should be hammered
 - 2 x 1 = 2 mks

23. .

- a. .
 - Location of homestead – for viewing the farm.
 - accessibility – easy to reach parts of the farm
 - Security – free from predators, thieves etc
 - Drainage – to prevent dampness that may destroy buildings & result into diseases
 - Direction of prevailing wind – to prevent bad / fowl smells
 - Relationship between the structures – structures with related uses should be close to each other to save time and labor
 - Farmers taste and preferences
 - Proximity to electricity & water supply
 - Topography – for proper drainage
- 5 x 1 = 5 mks

b. .

i. Symptoms

- Swollen foot
- Pain / limping / lameness
- Pus oozing out
- Rotten smell
- Kneeling while grazing
- Animal spent most of their time lying down
- Emaciation due to lack of feeding

ii. Control

- Provide clean environment
 - Regular foot examination / hoof trimming
 - Regular walk through footbaths with copper sulphate / formalin
 - Disinfect wounds on feet
 - Isolate sick animals
 - Move sheep to dry clean grazing grounds
- 6 x 1 = 6 mks

- c. Disadvantages of using animal power
 - More tedious
 - More than one person is required
 - It is slower
 - Less work output
 - Animal get tired
 - Animal are affected by diseases
 - Land must be set aside for feeding animals
 - 5 x 1 = 5 mks

24. .

- a. Components of a spray race
 - Side walls – provide support to the piping system
 - Spray pipe system – they atomize the chemical into spray form
 - Drainage pipe – re-cycles chemicals back to the pump
 - The pump / reservoir – it is a mixing tank
 - Pressure gauge – measures the recommended working pressure
 - 5 x 1 = 5 mks
- b. Selection
 - Young age – that have not produced more than once
 - Good level of performance – high growth rate, good mothering ability etc
 - Good physical fitness – no defects e.g lameness
 - Healthy – free from diseases
 - Body conformation
 - Behavior – not aggressive
 - High quality products
 - Mothering ability
 - Adaptability
 - More prolific
- c. .
 - Check engine oil , if low add
 - Check fuel / diesel , if low add
 - Check the tyre pressure if low add
 - Add water in the radiator if low
 - Tighten loose bolts & nuts
 - Apply grease
 - Check fan belt tension and ensure it deflects between 1.9cm – 2.5 cm
 - Add break fluid if low
 - Remove sediments from the sediment bowl
 - Check the level of electrolyte if low add distilled water

25. .

- a. Procedure of honey harvesting
 - Approach the hive quietly
 - Apply smoke

- Lower the hive to the ground
 - Remove the lid and inspect the top bars / cut the combs
 - Place back the top bars
 - Return the hive to its position
- 5 x 1 = 5 mks

b. .

- Fermentation of food
 - Synthesis of Vit. B complex and Vit. K
 - Synthesis of amino acid from ammonia gas
 - Break down of proteins to peptides, amino acids and ammonia gas
 - Breakdown of carbohydrates and cellulose into volatile fatty acids
- 5 x 1 = 5 mks

c. .

- Proper stocking / right population of fingerlings in the pond
 - Proper feeding, excess feeds will pollute the pond / avoid underfeeding
 - Prevent fish from predators that will reduce the number of fish in the pond
 - Siltation / pollution can result into death of fish in the pond
 - Adequate flow of fresh water through inlet to supply enough oxygen
- 5 x 1 = 5 mks

d. .

- Store in a safe place after use
 - Use correct tool for the correct job
 - Maintain and service tools
 - Handle tools correctly to avoid injury to the user
 - Use safety devices e.g goggles while soldering
 - Store tools properly in tool racks
- 5 x 1 = 5 mks