

2425/102
ANIMAL PRODUCTION I
June/July 2019
Time: 3 hours



THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AGRICULTURE

MODULE I

ANIMAL PRODUCTION I

3 hours

INSTRUCTIONS TO CANDIDATES

*This paper consists of EIGHT questions.
Answer any FIVE questions in the answer booklet provided.
All questions carry equal marks.
Maximum marks for each part of a question are indicated.
Candidates should answer the questions in English.*



This paper consists of 4 printed pages.

Candidates should check the question paper to ascertain that all the pages are printed as indicated and that no questions are missing.

1. (a) Describe each of the following methods of bush control in rangelands:

(i) physical removal;

(ii) biological control.

(4 marks)



(b) State the function of each of the following parts of a plunge dip:

(i) collection yard;

(ii) foot bath;

(iii) jump;

(iv) dip tank;

(v) draining race;

(vi) silt trap outlet;

(vii) roof;

(viii) soak pit.

(16 marks)



✓ 2. (a) Explain each of the following methods of animal selection:

(i) tandem selection;

(ii) independent culling levels;

(iii) index selection.

(6 marks)

(b) In a ranch in Kajiado, approximately one calf in 10,000 cows is born with congenital defect, *Atresia ani* that affects individuals who are homozygous for the recessive allele (aa). Calculate:

(i) frequency of the recessive allele (a) in the population;

(ii) frequency of the normal allele (A);

(iii) the number of heterozygote individuals.

(14 marks)

aa Aa AA

3. (a) Table I shows the levels of heritability of traits.

Table I

Heritability	Level
0 - 0.1 (0 - 10%)	
0.1 - 0.3 (10 - 30%)	
0.3 < (above 30%)	

- (i) Indicate the level of each value (percentage) of heritability given.
 (ii) State the significance of the level with heritability value of more than 0.3. (4 marks)

- (b) Explain how each of the following factors of an animal affect its feed intake:

- (i) physiological status;
 (ii) fatness;
 (iii) size;
 (iv) sex. (8 marks)

- (c) Explain **four** reasons for keeping livestock healthy. (8 marks)

4. (a) Describe trypanosomiasis disease with respect to:

- (i) aetiology;
 (ii) symptoms;
 (iii) prevention;
 (iv) treatment. (10 marks)

- (b) Explain the types of soil degradation processes in rangelands. (10 marks)

5. (a) Identify seven uses of livestock. (7 marks)

- (b) Table II shows hormones responsible for animal reproduction.

Table II

Hormone	Source	Function
1. Oestrogen		
2. Luteinizing hormone		
3. Progesterone		
4. Oxytocin		

- (i) Name the source for each of the hormones.
 (ii) Highlight the functions of each of the hormones. (13 marks)

- ✓ 6. (a) Define the term 'grazing management'. (2 marks)
- (b) Describe grazing management with respect to:
- (i) time of grazing;
 - (ii) frequency of grazing;
 - (iii) intensity of grazing;
 - (iv) number of animals. (18 marks)
7. (a) Highlight the characteristics of an ideal crop for silage making. (4 marks)
- (b) Explain the importance of each of the following treatments on a crop for silage making.
- (i) field wilting;
 - (ii) fine chopping;
 - (iii) addition of additives. (6 marks)
- ✗ (c) Describe dermatophilosis disease with respect to:
- (i) aetiology;
 - (ii) symptoms;
 - (iii) prevention;
 - (iv) treatment. (10 marks)
- ✓ 8. (a) Explain extensive system of dairy cattle production. (5 marks)
- (b) Describe each of the following physical indicators of animal feed quality:
- (i) stage of growth;
 - (ii) texture;
 - (iii) appearance and colour;
 - (iv) freshness. (15 marks)



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