2425/102
ANIMAL PRODUCTION I
June/July 2018
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AGRICULTURE

MODULE I

ANIMAL PRODUCTION I

3 hours

INSTRUCTIONS TO CANDIDATES

You should have the following for this examination:
Answer booklet;
Non-programmable scientific calculator.
*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.

Turn over

1. (a) Explain the following terms as used in animal production:

   (i) type of animal;
   (ii) indigenous breed.

   (4 marks)

   (b) Highlight the problems facing pastoral system of animal production. (7 marks)

   (c) Highlight the reasons for weight determination of an animal. (9 marks)

2. (a) Describe the following methods of livestock identification:

   (i) freeze branding;
   (ii) ear tagging.

   (4 marks)

   (b) Describe the following types of vaccines:

   (i) inactivated (killed);
   (ii) live attenuated.

   (4 marks)

   (c) Explain the following strategies used to manage livestock distribution:

   (i) water;
   (ii) supplements;
   (iii) fencing.

   (12 marks)

3. (a) State any **five** rules observed when using a plunge dip. (5 marks)

   (b) Highlight the factors that affect stocking rate in rangelands. (7 marks)

   (c) Explain the contribution of animals to humanity. (8 marks)

4. (a) Define the term 'gene frequency'. (2 marks)

   (b) Describe the following types of mutations:

   (i) substitution;
   (ii) insertion;
   (iii) deletion.

   (6 marks)

(c) Table I shows information on a population of beef herd which is in equilibrium. If the frequency of black colour is f (B) = p = 0.54 and the frequency of red colour is f(b) = q = 0.46:

Table I

BB	Bb	bb
p^2	2pq	q^2
x	y	z

(i) determine the values of x, y and z:

(ii) if 100 heads of cattle are sampled, calculate the number of animals for each genotypic frequencies. (12 marks)

5. (a) Distinguish continuous grazing from strip grazing. (6 marks)

(b) Discuss feed lot system with respect to:

(i) meaning;
(ii) advantages;
(iii) disadvantages.

(14 marks)

6. (a) Define the term 'reproductive cloning' in animals. (2 marks)

(b) Explain **five** methods of animal disease prevention. (10 marks)

(c) Describe economic selection index with respect to:

(i) steps;
(ii) advantages;
(iii) disadvantages.

(8 marks)

7. (a) Explain the concept of by-pass protein in ruminant nutrition. (4 marks)

(b) Discuss Actinobacillosis in cattle with respect to:

(i) causative agent;
(ii) signs and symptoms;
(iii) treatment;
(iv) prevention and control.

(16 marks)

8. (a) Differentiate between dietary essential and dietary non-essential amino acids. (4 marks)

(b) Highlight **six** methods of decreasing protein and amino acids degradation in rumen. (6 marks)

(c) Explain the losses incurred by the farmer due to animal diseases. (10 marks)

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