2425/102
ANIMAL PRODUCTION I
Oct./ Nov. 2018
Time: 3 hours

THE KENYA NATIONAL EXAMINATIONS COUNCIL

DIPLOMA IN AGRICULTURE

MODULE I

ANIMAL PRODUCTION I

3 hours

JAN 2019

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 3 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) Explain the best practices of collecting clean eggs.   (6 marks)

    (b) In a population of 14,500 dairy cows, 38% of the cow are homozygous recessive for a certain trait. Calculate:

         (i)   the number of homozygous recessive individuals;
         (ii)   the number of homozygous dominant individuals;
         (iii) the number of heterozygous individuals.

                                                                                 (14 marks)

2. (a) Highlight the effects of overgrazing rangelands.   (3 marks)

    (b) Describe bush management by burning method.   (7 marks)

    (c) Highlight the advantages and disadvantages of plunge dips.   (10 marks)

3. (a) Explain the role of Kenya Bureau of Standards (KEBS) in animal feeds.   (8 marks)

    (b) Explain the factors considered when constructing a livestock house.   (12 marks)

4. (a) Define the term 'epistasis'.   (1 mark)

    (b) Genetic gain per year (G) is calculated using the formula: $G = \dfrac{h^2 \times S.D}{G.I}$:

         (i)   identify the variable h^2, S.D and G.I;
         (ii) explain the identified variables.

                                                                                 (9 marks)

    (c) Explain the use of the following in selection of animals:

         (i)   individual performance;
         (ii)   life performance records;
         (iii) pedigree information;
         (iv)   progeny performance;
         (v)   performance of other relatives.

                                                                                 (10 marks)

5. (a) Define the term 'health'. (2 marks)

(b) Table I shows various livestock diseases. Fill in the remaining information.

Table I

Disease	Aetiology	Prevention measures	Treatment
Anthrax			
Black quarter			
Actinobacillosis			
East Coast Fever			
Foot and mouth disease			
Coryza			

(18 marks)

6. A farmer used Pearson's square method to formulate 1000 kg feed ration containing 30% crude protein (c.p) using the following:

Source of energy - maize (10% c.p)
Source of protein - fish meal (72% c.p)
- soya bean meal (43% c.p)

The ratio of fish meal to soya bean meal is 1:2. Calculate the:

(a) amount of maize in the ration;

(b) amount of soya bean meal in the ration;

(c) amount of fish meal in the ration.

(20 marks)

7. (a) Highlight signs of animal diseases observed through the following:

(i) defecation;
(ii) mucous membranes. (8 marks)

(b) Explain six factors considered in animal feed formulation. (12 marks)

8. (a) Explain the challenges experienced by the farmers when utilizing livestock and livestock products. (10 marks)

(b) Explain the following livestock production systems:

(i) pastoral nomadism;
(ii) ranching. (10 marks)

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