

CHUKA



UNIVERSITY

UNIVERSITY SUPPLEMENTARY/SPECIAL EXAMINATIONS.

THIRD YEAR EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN ANIMAL HEALTH AND PRODUCTION

ANSC 334: BIOTECHNOLOGY IN ANIMAL NUTRITION

STREAMS: BS.c (ANIMAL SCIENCE)

TIME: 2 HOURS

DAY/DATE: THURSDAY 26/07/2018

11.30 A.M - 1.30 P.M

INSTRUCTIONS

Section A: Answer ALL Questions.

1. Define the following:
 - (a) Plasmid [2 Marks]
 - (b) Biotechnology [2 Marks]
 - (c) Genetic engineering [2 Marks]
 - (d) Enzymes [2 Marks]
 - (e) DNA [2 Marks]
 - (f) Cloning [2 Marks]

2. List:
 - (a) Two methods used to transfer the construct into the recipient cell/tissue [2 Marks]
 - (b) Any 4 stages of recombinant DNA technique [4 Marks]
 - (c) Four impacts of genetic engineering on society [4 Marks]
 - (d) Any 2 classes of bacteria found in the rumen [2 Marks]

3. Describe or explain the following:
 - (a) Non-Ruminants do not fully benefit from the presence of micro-organisms in the large intestine [4 Marks]
 - (b) The digestion of lipids in the rumen [6 Marks]
 - (c) Sources of absorbed amino acids in the ruminant animals [4 Marks]
 - (d) Why ionophores are used in the rations of animals [2 Marks]

SECTION B: [ANSWER 2 QUESTIONS]

4. Brewing is one form of biotechnology.
 - (a) Explain the above statement [2 Marks]

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- (b) List 3 other industrial applications of biotechnology. [3 Marks]
 - (c) What is parthenogenesis? [4 Marks]
 - (d) List 2 ethical issues of biotechnology. [2 Marks]
 - (e) Describe the effects of defaunation in animal nutrition. [4 Marks]
5. Application of biotechnology in animal nutrition has become an active field of study
- (a) Discuss the factors which limit the availability of nutrients from feeds. [5 Marks]
 - (b) Outline the use of biotechnology in improving the efficiency of protein utilization. [6 Marks]
 - (c) Discuss the use of biotechnology in counteracting the effects of mimosine in animal feeds. [4 Marks]
6. Manipulation of microbial population is one approach of improving the utilization of nutrients in ruminants.
- (a) Define the terms prebiotics and probiotics as used in animal production. [4 Marks]
 - (b) Discuss the use of antibiotics in poultry production. [6 Marks]
 - (c) Describe the use of oligosaccharides as a replacement of antibiotics. [5 Marks]
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