

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR  
OF SCIENCE IN ANIMAL SCIENCE

ANSC 342: BIOTECHNOLOGY IN ANIMAL BREEDING

STREAMS: BSC (ANSC

TIME: 2 HOURS

DAY/DATE: MONDAY 06/04/2020

2.30 P.M. – 4.30 P.M.

INSTRUCTIONS:

- This examination has two sections A and B
- Attempt ALL questions in section A and any TWO in section B
- Mobile phones are NOT allowed in the examination room

SECTION A: ATTEMPT ALL QUESTIONS (30 MARKS)

1. With the aid of a diagram, illustrate the double helical structure of a DNA strand [5 marks]
2. With the aid of a diagram, distinguish between purines and pyrimidines [6 marks]
3. Describe the roles of RNAs found in eukaryotes [6 marks]
4. Define the following: [5 marks]
  - (a) Point mutation
  - (b) SNP
  - (c) Microsatellite
  - (d) QTL
  - (e) MAS
5. Describe any four factors that cause polymorphism [8 marks]

SECTION B: ATTEMPT ONLY TWO QUESTIONS

6. Describe the following processes
  - (a) Semi-conservative DNA replication [10 marks]

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- (b) RNA processing [10 marks]
7. Discuss mutations under the following headings
- (a) Chromosomal mutations [8 marks]
- (b) Point mutations [8 marks]
- (c) Differentiate between translation and transcription [4 marks]
8. Write short notes on the following
- (a) Marker Assisted Selection
- (b) Marker Assisted Introgression
- (c) Genomic selection
- (d) Phenotypic selection [20 marks]
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