

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATIONS**

**RESIT/SPECIAL EXAMINATION**

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE  
IN BOTANY**

**BOTA 413: MOLECULAR AND MICROBIAL GENETICS**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: WEDNESDAY 03/02/2021**

**2.30 P.M – 4.30 P.M.**

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**INSTRUCTIONS**

**Answer all questions in section A and any two in section B**

1. Describe three properties of DNA (6 marks)
2. Describe the differences between DNA and RNA (6 marks)
3. Describe the central dogma of molecular biology (6 marks)
4. Describe the characteristics of the genetic code (6 marks)
5. Describe 6 features of molecular mutations (6 marks)

**Section B**

6.
    - a. Describe the process of transcription in bacteria (10 marks)
    - b. Describe the lac operon (10 marks)
  7.
    - a. Describe posttranslational modification of proteins (10 marks)
    - b. Describe the cloning vectors used in molecular biology (10 marks)
  8.
    - a. Describe the mechanisms of genetic recombination in bacteria (10 marks)
    - b. Discuss the types of molecular mutations (10 marks)
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