

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION**

**RESIT/SPECIAL EXAMINATION**

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

**BIOC 443: INTEGRATED LABORATORY**

**STREAMS:**

**TIME: 2 HOURS**

**DAY/DATE: MONDAY 01/11/2021**

**8.30 A.M – 10.30 A.M**

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**INSTRUCTIONS**

- i. Answer Question One and any other Two Questions**
- ii. Do not write on the question paper**

**Question One (30 marks)**

- a. Differentiate between the two types of primers used in PCR. (5 marks)
- b. Outline the key consideration while designing suitable primers. (5 marks)
- c. Explain the importance of magnesium ions during DNA amplification. (5 marks)
- d. How many copies of DNA will be available after three cycles of amplification? Explain? (5 marks)
- e. Describe the steps involved in polymerase chain reaction. (10 marks)

**Question Two (20 marks)**

- a. Describe the different types of ELISAs. (12 marks)
- b. Outline the various applications of ELISA. (8 marks)

**Question Three (20 marks)**

- a. Describe the method of collection, handling and transport of venous blood samples. (10 marks)
- b. Describe urine specimen collection, handling and transport. (10 marks)

**Question Four (20 marks)**

- a. Describe the variants of Polymerase Chain Reaction. (10 marks)
  - b. Describe how DNA cloning is achieved using the cell based approach. (10 marks)
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