

CHUKA



UNIVERSITY

**UNIVERSITY EXAMINATION
RESIT/SUPPLEMENTARY / SPECIAL EXAMINATIONS
EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
BIOCHEMISTRY**

BIOC 301/350: BIOCHEMISTRY OF NUCLEIC ACIDS

STREAMS: BSc. BIOCHEMISTRY

TIME: 2 HOURS

DAY/DATE: THURSDAY 12/08/2021

2.30 P.M - 4.30 P.M.

INSTRUCTIONS

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

Question One (30 marks)

- a. Describe the different forms of DNA. (5 marks)
- b. Describe two disorders associated with impaired packaging of DNA. (5 marks)
- c. Explain the roles of DNA polymerases involved in the replication of bacterial genome. (5 marks)
- d. Describe the structure of E. coli oriC and state its role. (7 marks)
- e. Explain the different ways through which DNA damage can occur. (8 marks)

Question Two (20 marks)

- a. Explain the different forms of genetic recombination. (10 marks)
- b. Describe the secondary structure of tRNA and give the roles of the various features (10 marks)

Question Three (20 marks)

- a. Briefly describe the events that can occur when two parental strands exchange portions as a result of DNA splicing (10 marks)

- b. A Doctors report described a patient as having degenerative changes in the eyes and skin as well as neural collapse. Describe what this could be attributed to (10 marks)

Question Four (20 marks)

- a. Describe how protein biosynthesis occurs in prokaryotes. (10 marks)
- b. Explain the steps involved in lagging strand synthesis. (10 marks)

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