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**UNIVERSITY OF KABIANGA**

**UNIVERSITY EXAMINATIONS**

**2015/2016 ACADEMIC YEAR**

**THIRD YEAR FIRST SEMESTER EXAMINATION**

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

**COURSE CODE: BIO 311**

**COURSE TITLE: BIOCHEMISTRY OF NUCLEIC ACIDS**

**DATE: 3/12/2015**

**TIME: 2.00 P.M-5.00 P.M**

**INSTRUCTIONS TO CANDIDATES:**

Answer **ALL** questions from **section A** and any other **TWO** from **section B**.

**SECTION A: 40 MARKS**

*Answer* ***ALL*** *questions*.

**QUESTION 1**

1. Show a phosphodiester linkage between Guanine and Cytosine in DNA. (3 marks)
2. Draw the structure of any two minor bases. (2 marks)
3. State any **two** differences between the forms of DNA. (3 marks)

**QUESTION 2**

Describe the salient features of a genetic code. (8 marks)

**QUESTION 3**

1. Define the term polycistronic. (1 mark)
2. Draw and label the structure of RNA. (4 marks)
3. Name **three** stop codons. (3 marks)

**QUESTION 4**

Discuss catabolism of purines. (8 marks)

**QUESTION 5**

Name the DNA replication enzymes in *E. coli* and outline their roles. (8 marks)

**SECTION B: 30 MARKS**

*Answer any* ***TWO*** *questions. Each carries 15 Marks.*

**QUESTION 6**

Discuss transformation in bacteria. (15 marks)

**QUESTION 7**

Describe translation in prokaryotes. (15 marks)

**QUESTION 8**

Discuss the experiment that confirms DNA as the carrier of genetic information. (15 marks)