_OLABISI ONABANJO UNIVERSITY
DEPARTMENT OF BIOCHEMISTRY
REMO CAMPUS, IKENNE
2016/2017 HARMATTAN SEMESTER EXAMINATIONS

COURSE CODE: BCH 311 TIME ALLOWED: 3 Hours

COURSE TITLE: MICROBIAL & GENETICS BIOCHEMISTRY DATE: 24 TH FEBRUARY, 2017

INSTRUCTION: Answer question ONE and any other question in section A, then answer all question in section B

SECTION A:

1. (a) What do understand by the the following terms: (i) Ori C site (ii) discontinuous DNA replication (iii) 3′-5′ exonuclease activity (iv) Okazaki fragments (v) replicon (vi) transposable elements (vii) coding strand (viii) antisense strand (ix) nonsense mutation (x) operon (xi) enhancer elements (x) transcription factors

(b) Name any six proteins involved in DNA replication. What are the roles/ functions of the proteins so named

(c) Compare and contrast the structure and properties of RNA polymerase and DNA polymerase III of E. coli

2 (a) Describe as much as you can the structure of the Ori C site of *E. coli*

(b) Give the names of six types of ribonucleic acid (RNA) molecules you are familiar with

(c) Describe the promoter region of a prokaryotic cell

3. (a) What do you understand by catabolite repression

(b) Describe the lac operon model for the regulation of transcription/gene expression

(c) Briefly comment on the effect of (i) rifampin and (ii) actinomycin D in prokaryotic RNA transcription

SECTION B:

4. What do you understand by the following term?
   (i) Genetic recombination
   (ii) Homologous recombination
   (iii) Transformation
   (iv) Specialized transduction
   (v) Generalized transduction

5. (a) What is a bacteriophage?
   (b) Write short note on the lytic life cycle and lysogenic life cycle of bacteriophage