



NATIONAL OPEN UNIVERSITY OF NIGERIA
14/16, Ahmadu Bello Way, Victoria Island

SCHOOL OF SCIENCE AND TECHNOLOGY
October, 2013 Examination

COURSE CODE: BIO 305

COURSE TITLE: MOLECULAR BIOLOGY

TIME ALLOWED: 2 HOURS

INSTRUCTION: ANSWER ANY FOUR QUESTIONS

- 1a. What is molecular biology.
- ii. Outline the relationship of molecular biology to other biological sciences.
- b. What do you understand by the term chromosomes?
 - ii. *Escherichia coli* is useful in molecular biology, discuss.
- 2ai. What is nucleic acid hybridisation?
- ii. Write short notes on the following: (i) acistron (2) muton (3) recon
- bi. List the major components of a nucleotide.
- ii. Describe how hormones control gene-expression.
- 3ai. Define DNA.
- ii. Write short notes on the following:
 - (i) t RNA (ii) r RNA (iii) m RNA
- bi. Define gene-expression.
- ii. Outline the characteristics of genetic code.
- 4ai. Describe the various steps involved in the process of chain elongation stage during protein synthesis..
- ii. What is DNA sequencing?
- bi. Briefly describe any two methods for determining DNA sequences.
- 5ai. What do you understand by the term catabolism?
- ii. Outline the important features of glycolysis.
- bi. Enumerate the stages involved in the breakdown of glucose.
- ii. Describe the process of oxidative phosphorylation
- 6a. Outline the importance of genes in heredity.
 - ii. Write short notes on termination and the kreb citric acid cycle
- bi. Highlight the roles of DNA and RNA
- ii. Describe the central dogma.