



**NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
SCHOOL OF SCIENCE AND TECHNOLOGY
MARCH/APRIL 2015 EXAMINATION**

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: BIO 305
COURSE TITLE: MOLECULAR BIOLOGY
TIME ALLOWED: 2 Hours

INSTRUCTION: Answer question ONE (1) and any other THREE (3) questions

- 1a. Describe how hormones control gene-expression. (8 marks)
- b. Outline the characteristics of genetic code. (7 marks)
- c. List the major components of a nucleotide. (3 marks)
- d. Account for the relationship of molecular biology to other biological sciences. (7 marks)
- 2a. List the stages involved in the breakdown of glucose. (4 marks)
- b. What is nucleic acid hybridization? (2 marks)
- c. Write **short notes** on the following:
 - (i) m RNA (3 marks)
 - (ii) t RNA (3 marks)
 - (iii) r RNA (3 marks)
- 3a. Describe the process of oxidative phosphorylation. (7 marks)
- b. Give an account of the central dogma. (8 marks)
- 4a. Outline the important features of glycolysis. (6 marks)
- b. *Escherichia coli* is useful in molecular biology, Discuss. (9 marks)
- 5a. Describe the structure of a DNA. (8 marks)
- b. Account for the relationship of molecular biology to other biological sciences. (7 marks)
- 6a. What do you understand by the term catabolism? (3 marks)
- b. Give a detailed description of any two methods used for determining DNA sequences. (12 marks)