



**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* 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)

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