NATIONAL OPEN UNIVERSITY OF NIGERIA
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS
MARCH/APRIL 2016 EXAMINATION

SCHOOL OF SCIENCE AND TECHNOLOGY

COURSE CODE: **BIO 305**
COURSE TITLE: **MOLECULAR BIOLOGY** **CERDIT UNIT: 2**

TIME: **2 HOURS**
INSTRUCTION: ANSWER QUESTION ONE (1) AND ANY OTHER THREE (3) QUESTIONS

1ai. what is molecular biology. (3 marks)
ii. Describe the structures of DNA. (8 marks)
bi. Outline the important features of glycolysis. (6 marks)
ii. Give a detailed description of hormonal control of gene-expression. (8 marks)

2a. Describe the process of oxidative phosphorylation. (7 marks)
b. Give an account of any two methods of determining DNA sequences. (8 marks)

3a. what is DNA sequencing? (3 marks)
b. Write **short notes** on each of the following:
(i) chromosome number (4 marks)
(ii) sex chromosomes (4 marks)
(iii) a cistron (4 marks)

4a**.** Summarize the roles of DNA and RNA (5 marks)
b**.** Describe with examples and illustrations the human genetic disorders. (10 marks)

5a. Account for the fact that *E. coli* is used as an experimental model in molecular biology. (6 marks)
b. Write **short notes** on each of the following:
i. promoter clearance (3 marks)
ii. chain elongation (3 marks)
iii. termination of transcription. (3 marks)

6a. Outline the major components of a nucleotide. (5 marks)
b. With the help of a **good illustration**, describe the central dogma. (10 marks)