



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI -
ABUJA
FACULTY OF SCIENCE
Department of Biological Sciences
2022_2 EXAMINATION

BIO 305: MOLECULAR BIOLOGY

Time allowed: 2hrs

Credit Units: 2

Instruction: Answer THREE questions only. Question 1 is compulsory.

- 1a Explain why Techniques are needed in Molecular biology (4½ marks)**
- 1b Describe the following bio-physico-chemical techniques used in Molecular Biology (25½ marks)**
- 2a.. Give the one letter symbol and three (3) codons of the following amino acids (20 mrks)**
- i. Proline**
 - ii. Leucine**
 - iii. Arginine**
 - iv. Glycine**
 - v. Alanine**
 - vi. Threonine**
 - vii. Valine**
 - viii. Serine**
- 3a What are sex chromosomes? 9 mrks**
- 3b. Describe Francois Jacob and Jacques Monod's model for the control of gene expression *E. coli*. 11mrks**
- 4ai List 3 conditions required for fermentation to take place (3 marks)**
- ii. State two products of fermentation. (2 marks)**
- 4b. Expatriate on the unique features of the transfer-Ribonucleic acid (9 marks)**
- 4c Highlight the roles of Deoxyribonucleic acid in organisms (6mrks)**
- 5. Identify and explain the operational/functional basis of gene (forms assumed by a gene) (20 mrks)**