**National Open University of Nigeria**
**Plot 91, Cadastral Zone, Nnamdi Azikiwe Expressway, Jabi - Abuja**
**Faculty of Science**

**BIO305 MOLECULAR BIOLOGY EXAMINATION**

**Time: 2 hours**

**Instructions: Answer 4 questions only .Question 1 is compulsory**

1a In a tabular form, three differences and similarities between deoxyribonucleic acid and ribonucleic acid ( 9½ marks)
b. Transcribe the following Codon to the complementary codon in the messenger RNA i). AAA ii). TAT iii). GGG iv). TCA v. AGG (5marks)
c. Differentiate between the Catabolism and Anabolism (3marks)
d. Explain the term 'Molecular Biology'. (7½marks**)**

2.a. Explain the nature and function of genes (10marks)
b. What is a cistron ? ***(5marks)***

3. a. List the forms of RNAs involved in protein synthesis (3marks**)**
b. **Describe** the role of DNA in the successful transfer of information during the replication of cells (12marks)

4. a Describe the processes involved Chain Termination (7½ marks)
b. What is the role of TATA box transcription?( 7½ marks)

5.a. In which part of the cell does the Krebs Citric Acid Cycle take place? (1 mark)
b. List the stages involved in the complete degradation of glucose (4marks)
c. What is the fate of the pyruvic acid produced during glycolysis under aerobic conditions? (10marks)