



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI - ABUJA
FACULTY OF SCIENCE
Department of Pure and Applied Sciences

June 2021 EXAMINATION 1234

BIO 316 – BIOINFOMATICS

Time: 1½ Hours

Credit Unit: 1

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

- 1a Define Accession Number (2 mrks)
- b State the aims of Bioinformatics (2 mrks)
- c Describe in detail the International Nucleotide Sequence Database Collaboration (partners; DDBJ, EMBL and GenBank of) and how they achieve common goal. (10 mrks)
- d Explain the following three (3) database retrieval tools (11 mrks)
 - i. LOOKUP
 - ii. FETCH
 - iii. BLAST

- 2a Briefly Explain the following two gene finding programs (5 mrks)
 - i. GENSCAN
 - ii. GRAIL
- 2b Enumerate the changes protein sequence undergo during evolution as postulated by Margaret O. Dayhoff (10 mrks)

- 3a What is the relevance of the development of computer methods pioneered by Dayhoff and her research group to bioinformatics? (3 mrks)
- 3b Enumerate the functions of Cluster Analysis (6 mrks)
- 3c Mention any six (6) search engines (6 mrks)

- 4a Define the term Database and state how it is classified (5 mrks)
- 4b What is the precursor for the establishment of Data Library by the European Molecular Biology Laboratory (EMBL)? (2mrks)
- 4c Provide the names of the bodies that created/established/built the following Database/Resources? (8 mrks)
 - i. Protein information resource (PIR)
 - ii. National Centre for Biotechnology Information (NCBI)
 - iii. GenBank
 - iv. Sequence Retrieval System (SRS)

- 5a Explain the purpose of Searching of sequence databases (3 mrks)
- 5b Describe the functions of *ENTREZ* (12 mrks)