



NATIONAL OPEN UNIVERSITY OF NIGERIA
UNIVERSITY VILLAGE, PLOT 91 CADASTRAL ZONE, NNAMDI AZIKIWE
EXPRESS WAY, JABI - ABUJA.
FACULTY OF SCIENCE
Department of Biological Sciences
2025_1 EXAMINATION...

BIO 316: Bioinformatics

TIME: 1½ Hours

CREDIT UNITS: 1

INSTRUCTION: Attempt THREE (3) questions in all. Question 1 is compulsory

- 1a. (i). Outline five (5) applications of bioinformatics **(5 marks)**
(ii). Enumerate the rationales of studying bioinformatics **(4 marks)**
- b. State the application of the developed computer methods pioneered by Dayhoff *et al* **(3 marks)**
- c (i). Define the following terms – Scripting **(2 marks)**
– Glue language **(2 marks)**
(ii). Outline the general advantages of scripting languages **(8 marks)**
- d. Itemize six (6) scripting language **(6 marks)**
- 2a. Write notes on primary database? **(10 marks)**
- b. List five (5) bioinformatics databases **(5 marks)**
- c. Write notes on DNA Databank of Japan (DDBJ) **(5 marks)**
- 3a. (i). Discuss the different bioinformatic tools? **(8 marks)**
(ii). List the four (4) bioinformatics task tools **(4 marks)**
- b. Explain two (2) applications of programmes in bioinformatics **(8 marks)**
- 4a. (i). Explain the five (5) variants of BLAST **(5 marks)**
(ii). Explain five (5) uses of BLAST **(10 marks)**
- b. State five (5) types of FASTA programs **(5 marks)**
- 5a. Discuss five (5) importance of phylogenetics **(10 marks)**
- b. Mention the types of phylogenetic tree, based on the presence or absence of a common root **(4 marks)**
- c (i). What is a cladogram? **(3 marks)**
(ii). Differentiate between a cladogram and a phylogenetic tree **(3 marks)**