



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A+' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – June 2021
VI Semester

Class : III UG
Major : Botany

Time : 3 Hours
Max. Marks: 100

18BBOC25 Phylogeography, Evolution and Bioinformatics

- CO1:** students can understand the relationship between and biogeography
CO2: Gain exposure of plant forms with regards to evolution
CO3: able to know the various bioinformatics tools
CO4: can able to analyze sequence alignments using various bioinformatics tools
CO5: analyze the phylogenetic alignment using tools
CO6: understand the basic knowledge of genomics
CO7: analyze the protein structure and its prediction

Part A
Choose the Correct Answer

10 x 1 = 10

- Which part of Himalayas covered with dense forest? CO1 K1
a. Northern b. Eastern
c. Western d. Sothern
- How many types of plant species are found in India? CO2 K2
a. About 45,000 b. About 40,000
c. About 47,000 d. About 20,000
- Which of the following part of India evergreen forest are found? CO1 K3
a. Assam b. Rajasthan
c. Odessa d. Uttar Pradesh
- Which condition can be explained by Lamarckism? CO2 K3
a. Long neck of Giraffes b. Loss of tail of human
c. How humans became bipedal? d. All the above
- The earliest Geological time period among the following is CO2 K1
a. Cambrian b. Premian
c. Jurassic d. Quaternary
- Genomics refers to CO4 K3
a. It include mapping of genome b. It include genome sequencing
c. It include genome analysis d. All the above
- The precise biochemical activity of a protein is described in CO7 K3
a. Phenotypic function b. Cellular function
c. Molecular function d. Structural genomics
- The first bioinformatics database was created by CO5 K1
a. Richard Durbin b. Dayhoff
c. Micheal J. Dunn d. Pearson
- Which of the following is a protein sequence database? CO5 K1
a. DDBJ b. EMBL
c. Gen Bank d. PIR

10. All are sequence alignment tools except CO7 K4
a. Rasmol b. BLAST
c. FASTA d. Clustal W

Part B **5 x 6 = 30**
Answer ALL questions
Each answer should not exceed 400 words or two pages

- 11.a. Differentiate continuous, discontinuous and endemic distribution. CO1 K2
(or)
11.b. Plants are indicators for environmental monitoring – Justify the statement. CO1 K5
- 12.a. Explain Lamarckism. CO2 K1
(or)
12.b. Comment on natural selection theory. CO2 K3
- 13.a. Explain Hidden Markov model of gene predictions. CO6 K2
(or)
13.b. Comment on gene map. CO3 K4
- 14.a. Write short note on SWISS-PROT. CO7 K2
(or)
14.b. Comment on CATH. CO7 K3
- 15.a. Give short note on BLAST and FASTA. CO4 K3
(or)
15.b. Explain Phylip. CO5 K2

Part C **5 x 12 = 60**
Answer ALL questions
Each answer should not exceed 800 words or four pages

- 16.a. Comment on vegetation of India. CO1 K2
(or)
16.b. Explain Wegner's theory of continental drift. CO1 K3
- 17.a. Write about mutation theory and its significance. CO2 K2
(or)
17.b. Comment on origin of life. CO2 K2
- 18.a. Discuss the applications of proteomics in health sector. CO6 K4
(or)
18.b. Write about cDNA microarray and its uses. CO5 K2
- 19.a. Write the history and scope of bioinformatics. CO3 K2
(or)
19.b. Comment on Biological database. CO4 K2
- 20.a. Describe Needleman and Wunsch Algorithm. CO7 K4
(or)
20.b. Write about different methods of phylogenetic analysis. CO5 K2
