

FIRST SEMESTER B.Sc. DEGREE EXAMINATION, NOVEMBER 2021

(CBCSS—UG)

Botany and Computational Biology (Double Main)

CMB 1B 01—FUNDAMENTALS OF COMPUTATIONAL BIOLOGY AND
BIOINFORMATICS

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer at least eight questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What is a primary database ?
2. What is literature database ?
3. What is PDB ?
4. What is ChemSpider ?
5. What is Needleman-Wunsch algorithm ?
6. What is PAM matrix ?
7. What is FASTA ?
8. Define phylogeny.
9. What is MEGA ?
10. Define genomics.
11. Define homologous sequences ?
12. What is genetic map ?

(8 × 3 = 24 marks)

Turn over

Section B

Answer at least five questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. Write on KEGG database ?
14. What is the difference between local and global alignment ?
15. Briefly explain Dot Plot method ?
16. Briefly write on Dynamic Programming.
17. What is the character based method to construct a phylogenetic tree ?
18. What is proteome mining ?
19. Write some important findings of Human Genome Project.

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

20. Write on nucleotide sequence databases.
21. Discuss on important applications of multiple sequence alignment.

(1 × 11 = 11 marks)

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Botany and Computational Biology (Double Main)

BOC 1B0 IT—ANGIOSPERM ANATOMY, REPRODUCTIVE BOTANY AND
PALYNOLOGY

(2021 Admissions)

Time : Two Hours

Maximum : 60 Marks

Section A*Answer at least **eight** questions.**Each question carries 3 marks.**All questions can be attended.**Overall Ceiling 24.*

1. What are Tylosis ? How are they formed ?
2. Define Dendrochronology.
3. What are secretory tissue ? mention its types.
4. Explain with examples the terms, exarch, endarch and mesarch with reference to xylem.
5. What is Cystolith ?
6. Define Tapetum.
7. What is nuclear endosperm ?
8. Define microsporogenesis.
9. What is meant by Palynology ?
10. Differentiate between vascular cambium and cork cambium.
11. Define Xylem. What are the elements of Xylem ?
12. Differentiate porous wood and non-porous wood.

(8 × 3 = 24 marks)

Turn over

Section B

Answer at least five questions.

Each question carries 5 marks.

All questions can be attended.

Overall Ceiling 25.

13. How will you differentiate Tunica-carpus theory from Histogen theory.
14. Differentiate the anatomical features of dorsiventral and iso-bilateral leaf.
15. What is Periderm ? How does periderm formation take place in the dicot stem ?
16. What are growth rings ? How are they formed ?
17. What do you mean by pollination ? Explain the different types of pollination.
18. Write the significance of double fertilisation and triple fusion in Angiosperms.
19. Briefly explain structure of pollen wall and pollen allergy.

(5 × 5 = 25 marks)

Section C

Answer any one question.

The question carries 11 marks.

20. With labelled diagram describe the anomalous secondary growth in *Dracaena* stem.
21. What is Embryosac ? Describe monosporic, bisporic and tetrasporic development of embryosac with suitable examples.

(1 × 11 = 11 marks)