(Pages : 4) **N – 1602**

Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2022

Career Related First Degree Programme under CBCSS

Botany and Biotechnology

BB 1661.1 : BIOINFORMATICS AND NANOBIOTECHNOLOGY

(2019 Admission)

Time : 3 Hours Max. Marks : 80

PART – A

Answer **all** the questions in a word, one sentence or two sentences. Each question carries **1** mark.

1. Define proteomics.
2. What are DNA chips?
3. What is E value?
4. What is a scoring function?
5. Expand DDBJ.
6. Define a microarray.
7. What are quantum dots?
8. Name a derivative database.

P.T.O.

9. Define a nano Particle.

10. What is PHYLIP?

(10 × 1 = 10 Marks)

PART – B

Answer **any eight** questions. Each question carries **2** marks. (Answer not to exceed **one** paragraph).

11. List out the objectives of molecular phylogeny.

12. What is Gap penalty?

13. Brief a note on PDB.

14. Mention the significance of PubMed.

15. Explain Global Sequence Alignment.

16. Comment on EMBL.

17. What are motifs?

18. What is gene finding?

19. Write a short note on genome sequence assembly.

20. Give an account on structural proteomics.

21. Define orthologs.

22. What is GenBank?

23. Differentiate primary database from secondary database.

24. What is a prosthetic implant?

25. Write a note on FASTA format.

26. What is PAM?

(8 × 2 = 16 Marks)

PART – C

Answer **any six** questions. Each question carries **4** marks. (Answer not to exceed **120** words.)

27. Compare ‘similarity’ and homology’ in gene sequence analysis.

28. Give an account on NCBI.

29. Discuss the role of nanotechnology in drug delivery systems.

30. Cornment on DNA sensors? Add a note on its applications.

31. How do databases help in computational biology?

32. What is BLAST? Explain its types.

33. Discuss the application of nanocrystals.

34. What is multiple sequence alignment? Add a note on Clustal W.

35. Explain the distance based method in phylogenetic tree construction.

36. What is SWISS PROT? Explain.

37. How databases are classified?

38. Discuss the applications of comparative genomics.

(6 × 4 = 24 Marks)

PART – D

Answer **any two** questions. Each question carries **15** marks. (Answer not to exceed **3** pages.)

39. "Discuss the applications of nanobiotechnology in medicine and health.

40. Give a detailed account on biological databases.

41. Discuss different methods of phylogenetic tree construction.

42. How proteins are identified by Mass Spectrometry?

43. Discuss the application of bioinformatics in modern biology.

44. Write an essay on working and applications of 2D PAGE

(2 × 15 = 30 Marks)

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