**B.Sc. Botany Degree (C.B.C.S.S.) EXAMINATION, MARCH 2016**

**Sixth Semester**

**Core course BIOTECHNOLOGY AND BIOINFORMATICS**

(Common for B.Sc. Botany Model I, Model II Programmes)

Time: Three Hours Maximum marks: 60

**Part A**

Answer **all** questions.

Each question carries **1** mark

1. Expand NCBI

2. Define gene banks

3. Name any one tool for DNA sequence alignment.

4. What is electroporation?

5. What are cybrids?

6. Define cloning vectors

7. Name the tissue culture technique used to produce virus free plants

8. Name a synthetic auxin (8×1=8 Marks)

**Part B**

Answer any **six** questions.

Each question carries **2** marks

9. What are artificial seeds? Add a note on their use

10. What are databases? Give an account of different databases you have studied.

11. Explain the procedure of Southern blotting

12. Give two examples of transgenic plants with their useful characters.

13. What is Ti plasmid? Add a note on its application in plant genetic engineering

14. What is the use of laminar air flow chamber in tissue culture? Comment on its working principle

15. What are edible vaccines? Give an example.

16. What is meant by tissue engineering technology?

17. Describe the application of molecular docking

18. Differentiate between direct and indirect organogenesis (6×2=12 marks)

**Part C**

Answer any **four** questions.

Each question carries **4** marks

19. Describe briefly about antisense RNA technology. In which situation it can be employed.

20. Discuss about DNA finger printing and its applications.

21. Describe the application of biotechnology in medicine.

22. Give an account of different types of biological databases

23. List out the major goals of HGP

24. What are restriction enzymes? Explain how they act on DNA.

 (4×4=16 marks)

**Part D**

Answer any **two** questions.

Each question carries **12** marks

25. Write an account on the various methods used to transfer recombinant DNA into a host cell

26. Write an essay on protoplast isolation, culture and somatic hybridization

27. Describe the Sanger’s method of DNA sequencing.

28. Describe briefly about molecular phylogeny and phylogenetic tree (2×12=24 marks)