

C 21153

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Name.....

Reg. No.....

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2017

(CUCBCSS—UG)

Biotechnology

BTY 6B 15—RECOMBINANT DNA TECHNOLOGY AND BIO-INFORMATICS

Time : Three Hours

Maximum : 80 Marks

Section A

Answer any two out of four questions in about 1,500 words.

Each question carries 10 marks.

1. Describe the tools and methods of gene cloning.
2. Explain the various steps in rDNA technology and its applications.
3. Explain the method of constructing the genomic library. Give its significances.
4. Discuss the Bioinformatics tools and their biological applications.

(2 × 10 = 20 marks)

Section B

Answer any seven out of fourteen questions in about 750 words.

Each question carries 5 marks.

5. What is an adaptor ? Comment on its applications.
6. Write short notes on DNA polymerase I.
7. Compare and contrast the prokaryotic and eukaryotic structural genes.
8. Describe the dideoxy DNA sequencing method.
9. Explain the northern blotting technique and its applications.
10. Give short notes on human genomic DNA isolation and purification procedure.
11. What are the salient features of an ideal vector ?
12. Write short notes on properties of Plasmids.
13. What are the strategies employed in plant cell line culture ?
14. How is the plant bacterial pathogen detected by molecular techniques ?
15. Write short notes on molecular pharming.
16. What is EMB ? Explain its importance of biology.

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17. Explain the procedure and methods of primer designing tool and its importance.
18. How will you construct phylogenetic tree through multiple sequence alignments ?

(7 × 5 = 35 marks)

Section C

Answer all questions in about 300 words.

Each question carries 3 marks.

19. Explain the functions of DNA ligase.
20. Give an account on Real time PCR.
21. Write the significances of cell line culture.
22. Describe the direct gene transfer method in plant tissue culture.
23. Explain the method of purification of recombinant proteins.

(5 × 3 = 15 marks)

Section D

Answer all questions in about 200 words.

Each question carries 2 marks.

24. What is the advantage of Pfu enzyme ?
25. What is molecular beacon probe ?
26. Define electroporation.
27. What is GFP and its significance ?
28. What is MHCPred ?

(5 × 2 = 10 marks)