

SIXTH SEMESTER B.Sc. DEGREE EXAMINATION, MARCH 2019

(CUCBCSS)

Biotechnology

BTY 6B 15—RECOMBINANT DNA TECHNOLOGY AND BIOINFORMATICS

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. Explain the cloning strategies for the production of transgenics.
2. What is dideoxynucleotide ? How is it used to determine the sequence of a DNA molecule ?
3. Explain the formation of delayed ripening of tomato by gene manipulation with suitable diagram.
4. Write an essay on application of recombinant DNA technology in vaccine production.

(2 × 10 = 20 marks)

Section B*Answer any **seven** out of fourteen questions in about 750 words.**Each question carries 5 marks.*

5. Explain site directed mutagenesis.
6. What is an adaptor ? How it is used for cloning of blunt end DNA fragments ?
7. Explain the mechanism of PCR technique and its application.
8. What is a primer ? What are the key requirements of an effective primer ?
9. Give short notes on RAPD techniques used in plant breeding.
10. Comment on : (a) STR (b) AFLP.
11. Write short notes on (a) puc 18 (b) SV40.
12. Differentiate insertional vectors and replacement vectors.
13. Describe the types and characteristics of plasmids.
14. Give short notes on biopharming with examples.
15. Discuss about the advantage and disadvantage of genetically modified plants.

Turn over

16. Explain the Bt based molecular methods of producing disease resistant plants.
17. Write short notes on (a) NCBI (b) BITS.
18. Describe different types of algorithms used for biological sample analysis.

(7 × 5 = 35 marks)

Section C

*Answer **all** questions in about 300 words.*

Each question carries 3 marks.

19. Give an account on Western blotting and its applications.
20. Explain the Ti plasmid based transformation in plants.
21. Give a detailed description of viral vectors as vehicles of gene transfer.
22. Write a detailed account on the role of animal models in gene expression studies.
23. Explain the paternity determination by using the VNTR probes.

(5 × 3 = 15 marks)

Section D

*Answer **all** questions in about 200 words.*

Each question carries 2 marks.

24. What is gene bank ?
25. What is TATA box ?
26. What is Phagemids ?
27. What is SAGE map ?
28. What is TEPITOPE ?

(5 × 2 = 10 marks)