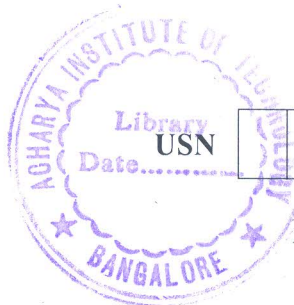


CBCS SCHEME



20BBT14

First Semester M.Tech. Degree Examination, Jan./Feb. 2021 R-DNA Technology

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

- 1 a. Explain in detail about genetic elements that control gene expression. (10 Marks)
b. Write about scope of genetic engineering and applications of genetic engineering. (10 Marks)

OR

- 2 a. Describe the steps involved in the isolation and purification of genomic DNA. (10 Marks)
b. Outline the differences between genomic DNA and plasmid DNA with diagrams. (10 Marks)

Module-2

- 3 a. Define vectors and write about the salient features of vectors in recombinant DNA technology. (10 Marks)
b. Define enzymes, types and classification. (10 Marks)

OR

- 4 a. Write a note on:
i) Nucleases
ii) Modifying enzymes. (10 Marks)
b. Give a detailed notes on polymerases and topoisomerases. (10 Marks)

Module-3

- 5 a. What is Transformation? Write about the methods and mechanisms of transformation in Bacteria. (10 Marks)
b. Write explanatory notes on selectable marker genes and reporter genes. (10 Marks)

OR

- 6 a. Describe the general technique of Northern blot hybridization and add a note on their applications. (Draw diagrams wherever necessary). (10 Marks)
b. Bring out the major differences between Southern Blotting and Northern Blotting. (10 Marks)

Module-4

- 7 a. Outline the differences between the genomic library and cDNA library. (10 Marks)
b. Write a note on screening of DNA libraries for clone identification. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

- 8 a. Outline the principle and procedure of PCR with applications. (10 Marks)
b. Write short notes on:
i) Radioactive
ii) Non-radioactive labeling of nucleic acids. (10 Marks)

Module-5

- 9 a. Describe the role of transgenic science in plant and animal improvement. (10 Marks)
b. Define Biopharming. Write a notes on animals as bioreactor for recombinant protein with examples. (10 Marks)

OR

- 10 a. Define genome editing. Write a notes on Zinc Finger Nucleases (ZFNs) and Transcription Activator Like Effector Nucleases (TALENs). (10 Marks)
b. What is CRISPR Technology? Write about the steps involved in CRISPR technology and its applications. (10 Marks)
