

CBCS SCHEME

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18NT72

Seventh Semester B.E. Degree Examination, Feb./Mar. 2022 Molecular Biology and Genetic Engineering

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain briefly about experiments of McLeod and McCarty, and Hershey and Chase. (10 Marks)
- b. Write a note on genes, chromosomes, genetic engineering and molecular genetics. (06 Marks)
- c. Discuss about prokaryotic and eukaryotic genome organization. (04 Marks)

OR

- 2 a. Discuss in detail about genetic transduction and transformation. (10 Marks)
- b. Explain in detail about the differences between the eukaryotic and prokaryotic cells. (10 Marks)

Module-2

- 3 a. Write a short note on DNA replication, DNA structure and role of DNA polymerase in replication. (10 Marks)
- b. With a neat schematic representation discuss about D-loop replication. Mention its importance. (10 Marks)

OR

- 4 a. Explain about DNA replication, similarities and differences of DNA replication in prokaryotes and eukaryotes. (10 Marks)
- b. Explain about transcription. Discuss in detail about various stages of transcription. (10 Marks)

Module-3

- 5 Explain in detail about the process of translation in prokaryotes and eukaryotes. (20 Marks)

OR

- 6 a. Write a note on genetic code, codon and reading frame. (10 Marks)
- b. Discuss in detail about trp operon. (10 Marks)

Module-4

- 7 a. Discuss in detail about DNA cloning and its uses. (10 Marks)
- b. Discuss about construction of cDNA and genome libraries. (10 Marks)

OR

- 8 a. Explain about Northern Blotting technique. (10 Marks)
- b. Discuss in detail about the principle, components and applications of PCR. Mention the types of PCR. (10 Marks)

Module-5

- 9 a. Write a note on recombinant cytokines and recombinant antibodies. (10 Marks)
- b. Explain about recombinant vaccine. (10 Marks)

OR

- 10 a. Explain in detail about stem cell therapy and its applications. (10 Marks)
- b. Give a comparative description on invitro fertilization and embryo transfer. (06 Marks)
- c. Write a short note on recombinant gene therapy. (04 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.