



CBCS SCHEME

18BT651

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Sixth Semester B.E. Degree Examination, June/July 2023 Biology for Engineers

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Illustrate the structure of plant and animal cell by drawing labelled diagram. (10 Marks)
b. Explain the different phases of prophase – I of meiotic first cell division. (10 Marks)

OR

- 2 a. Write a detailed note on stem cells and their clinical applications. (10 Marks)
b. What is cell sorting? Explain principle and instrumentation of flow cytometry (FACS). (10 Marks)

Module-2

- 3 a. Discuss the biological importance of carbohydrates lipids and aminoacids. (10 Marks)
b. What is central dogma? Explain the flow of genetic information in biological system. (10 Marks)

OR

- 4 a. Explain the mechanism of transcription in prokaryotes. (10 Marks)
b. Discuss different phases of translation in prokaryotes. (10 Marks)

Module-3

- 5 a. How are enzyme classified? Explain different classes of enzymes with suitable example. (10 Marks)
b. Discuss different factors affecting enzyme action. (10 Marks)

OR

- 6 a. What are immobilized enzymes? Mention their applications. (10 Marks)
b. Write note on:
(i) Applications of enzymes in textile and food industry (10 Marks)
(ii) Restriction enzymes in genetic engineering

Module-4

- 7 a. What are biomaterials? Mention different properties of biomaterials. (10 Marks)
b. Write the various applications of Gelatin and immobilized biomaterials. (10 Marks)

OR

- 8 a. Write the applications of biomaterials in cell growth and culture. (10 Marks)
b. Discuss in detail the protein as biological motors/molecular machines with suitable example. (10 Marks)

Module-5

- 9 a. Explain in detail the concepts of biodesigns and its applications. (10 Marks)
b. Discuss the bioprinting techniques and its applications. (10 Marks)

OR

- 10 a. Explain EEG and its monitoring in neurological disorders. (10 Marks)
b. What is bioremediation? Explain the process involved in removal of lead, cadmium and mercury using bioremediation. (10 Marks)

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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.