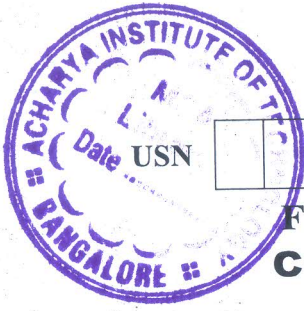


CBCS SCHEME

21BT43



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Fourth Semester B.E. Degree Examination, June/July 2023 Cell Biology and Cell Culture Techniques + Lab

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. Explain the physico-chemical nature of plasma membrane structure and functions. (10 Marks)
- b. Justify ribosomes as protein factories. (05 Marks)
- c. Write a short note on structure and functions of Golgi bodies. (05 Marks)

OR

- 2 a. Discuss chromosomal morphology and study of nucleosome model. (10 Marks)
- b. Differentiate between mitosis and meiosis cell division. (10 Marks)

Module-2

- 3 a. Elaborate on the Signalling molecules and cell surface receptors. (10 Marks)
- b. Write a note on G-protein coupled receptors. (05 Marks)
- c. List plant growth factors and discuss their functions (05 Marks)

OR

- 4 a. Discuss in detail about Apoptosis. (10 Marks)
- b. Explain in detail about quorum sensing with an example. (10 Marks)

Module-3

- 5 a. Illustrate with neat labeled diagram about Membrane transport, Passive and Active transport mechanism. (10 Marks)
- b. Give an account of Protein modifications in detail. (10 Marks)

OR

- 6 a. Explain in detail about Translocation of secretory proteins across the ER membrane. (10 Marks)
- b. Elaborate on sorting of proteins to mitochondria. (10 Marks)

Module-4

- 7 a. Give an account of the basic constituents of media and their role in plant tissue culture. (10 Marks)
- b. Elaborate on cellular totipotency and its applications. (10 Marks)

OR

- 8 a. Explain the process of production of secondary metabolites. (10 Marks)
- b. Describe the production of artificial seeds using immobilization technique and its significance. (10 Marks)

Module-5

- 9 a. Explain the lab layout and equipment required in animal cell culture lab. (10 Marks)
- b. Discuss in detail on cell lines and maintenance of cell lines. (10 Marks)

OR

- 10 a. Enlist the techniques involved in organ culture and discuss in detail any one of the techniques. (10 Marks)
- b. Elaborate application of animal cell culture for invitro testing of drugs. (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.