



10BT662

Sixth Semester B.E. Degree Examination, Dec.2019/Jan.2020

Plant Biotechnology

Time: 3 hrs.

Max. Marks:100

Note: 1. Answer any FIVE full questions, selecting at least TWO questions from each part.

2. Write neat labeled diagram wherever required.

PART – A

- 1 a. Write procedure, factors affecting and applications for Androgenesis and Gynogenesis. (10 Marks)
- b. Give nutrient formulation and specification for M.S. media. (05 Marks)
- c. Write a concise note on cryopreservation. (05 Marks)
- 2 a. Write a detailed note on Agrobacterium mediated transformation technique and applications. (10 Marks)
- b. Write structure and procedure for Ti plasmid as vector. (05 Marks)
- c. Write a brief note on viruses as a tool to deliver foreign DNA. (05 Marks)
- 3 a. What are cry proteins? Explain the structure and mechanism of action of cry proteins. (10 Marks)
- b. Write transgenic strategies for development of drought resistant plants. (05 Marks)
- c. Write a short note on alpha amylase inhibitors. (05 Marks)
- 4 a. Explain post harvest protection of plants antisense technique to increase shelf life of fruits and flowers. (10 Marks)
- b. Write short notes on:
 - i) Implications of gene patents
 - ii) Biosafety regulations for transgenic containment. (10 Marks)

PART – B

- 5 a. Explain engineering of Carotenoid and Provitamin biosynthetic pathways. (10 Marks)
- b. Write short notes on:
 - i) Biodegradable plastics
 - ii) Production of fatty acids. (10 Marks)
- 6 a. Explain the structure, function and role of nodulation by nif genes and nod genes. (10 Marks)
- b. Explain genetic engineering of hydrogenase genes. (05 Marks)
- c. Write a brief note on biofertilizers with any one example as biofertilizer. (05 Marks)
- 7 a. Explain molecular mechanism of signal transduction in plants by Auxins and Cytokinins. (10 Marks)
- b. Describe the mechanism of calcium and Sphingolipids signaling. (10 Marks)
- 8 a. Explain mass production and applications of Mycorrhizae in agriculture and forestry. (10 Marks)
- b. Write short notes on:
 - i) Micro algae as a source of proteins and feed.
 - ii) Single cell protein (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.