

# Question Paper

Exam Date & Time: 11-May-2023 (02:00 PM - 05:00 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

### Medicinal Plant Biotechnology [PCO-MPG201T -S1]

Marks: 75

Duration: 180 mins.

#### SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Give a descriptive note on Historical perspective of plant biotechnology and Historical Development in Biotechnology. (10)
- 2) Explain mechanical and enzymatic methods of isolation of Protoplast. Add a note on Somatic hybridization (10)
- 3) Define Transgenic plants. Explain various direct methods of gene transfer. (10)
- 4) Define cloning? Add a note on advantages and disadvantages of cloning. Elaborate various applications of cloning (10)
- 5) Give a detailed account on Single cell protein (10)

#### SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) Give the source, method of preparation and uses Papain and Bromelain (5)
- 7) Short note on genetic code (5)
- 8) What are Elicitors and Precursors. Classify them with examples. Give their applications (5)
- 9) What is bioreactor? Discuss about Pneumatically agitated bioreactors. (5)
- 10) What is hairy root culture? Give the applications of hairy root culture. (5)

-----End-----