

**T. Y. B. SC. (BIOTECHNOLOGY) SEM – VI (CBCS - 2015
COURSE) : SUMMER - 2018**

Subject: Plant Biotechnology

Day: **Wednesday**

Date: **11/04/2018**

S-2018-1064

Time: **10.00 am to 01.00 pm**

Max. Marks: 60

N.B.:

- 1) Q1 and Q5 are compulsory.
- 2) Answer ANY TWO questions from Q 2, 3, 4 in Section I.
- 3) Answer ANY TWO questions from Q 6, 7, 8 in Section II.
- 4) Answers to Both the sections to be written in SEPARATE answer books.
- 5) Draw a labeled diagram WHEREVER necessary.

SECTION - 01

Q.1) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) Enlist the strategies of micropropagation.
- b) Give reasons for browning of medium during initiation of tissue cultures.
- c) What is micropropagation?
- d) Explain the technique of acclimatization.
- e) Explain the role of *Agrobacteria* in plant transformation.
- f) What are secondary metabolites?

Q.2) Answer the following: (5 Marks X 2 = 10)

- a) Explain the technique of *in vitro* plant production via direct and indirect organogenesis
- b) Describe the methodology for Plant Tissue Culture technique.

Q.3) Explain the following: (5 Marks X 2 = 10)

- a) Embryo rescue technology
- b) Strategies for optimization of valuable chemicals

Q.4) Write short notes on the following: (5 Marks X 2 = 10)

- a) Applications of callus cultures
- b) Cryoprotectants

SECTION - 02

Q.5) Answer the following: (ANY FIVE) (2 Marks X 5 = 10)

- a) Enlist two organ cultures for the production of secondary metabolites with source plants.
- b) What are the basic parts of plant cell reactors?
- c) What are the objectives of plant genetic engineering?
- d) Why plant genetic modification is essential?
- e) What are edible vaccines?
- f) Give definition for genetically modified plants.

Q.6) Answer the following: (5 Marks X 2 = 10)

- a) Describe the method of transformation in hairy root cultures.
- b) Explain the technique of production of GM plants tolerant to herbicide

Q.7) Explain the following: (5 Marks X 2 = 10)

- a) Methods to make synchronous plant cell suspension.
- b) Need for the production of GM plants

Q.8) Write short notes on the following: (5 Marks X 2 = 10)

- a) Methods for transformation in plants
- b) Selectable markers
