

M. Sc. Botany - 4th Sem.

(2517)

Paper-BOT623: Plant Tissue Culture & Biotechnology

Time allowed: 3 hrs.

Max. Marks: 50

Note The question paper consist of three sections. Candidates are required to attempt all the sections.

Section-A: (8 marks) : It consists of ~~one~~ question having 8 parts. Candidates are required to attempt all the parts. Each part is carrying 1 mark. Explain in 3-4 lines.

Section-B: (21 marks) : It consists of ten parts. Candidates are required to attempt seven parts. Each part is carrying 3 marks. Answer should not exceed 2 pages.

Section-C: (21 marks) : It consists of five questions. Candidates are required to attempt three questions. Each question is carrying 7 marks. Answer should not exceed 4 pages.

Section A

Q.1 Define :

- Friable callus
- Somatic embryoid
- Explant
- Vitrification
- Primary metabolites
- Haploid Plants
- Synthetic seeds
- Vector

1 x 8 = 8

Section B

Q.2 Write short notes on :

- Regeneration
- Cryoprotectants
- Asynchrony via callus
- Healthcare & Biotechnology
- In vitro* Cinnamic acid production
- Herbicide resistance through tissue culture
- Suspension cultures
- Verminator Technology
- Cellular mutants
- Gene targetting

3 x 7 = 21

Section C

- Q.3 Describe *in vitro* micropropagation method for elite germplasm production. 7
- Q.4 Describe shikonin biosynthesis in cell cultures. 7
- Q.5 Describe *in vitro* secondary metabolite production and their commercial applications. 7
- Q.6 Describe *in vitro* haploid plant production and their applications in agriculture. 7
- Q.7 Comment on cryo gene banks and various cryopreservation methods. 7

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