

**C.U.SHAH UNIVERSITY**

Summer-2015

Subject Code: 4LS03BOT1

Subject Name: Plant Biotechnology

Course Name: B.Sc. (Micro)

Date :5/5/2015

Semester: 3

Marks: 70

Time:2:30 To 5:30

**Instructions:**

- 1) Attempt all Questions of both sections in same answer book/Supplementary.
- 2) Use of Programmable calculator & any other electronic instrument prohibited.
- 3) Instructions written on main answer book are strictly to be obeyed.
- 4) Draw neat diagrams & figures (if necessary) at right places.
- 5) Assume suitable & perfect data if needed.

**SECTION-I**

Q-1 Define the following

- (a) Callus (b) Somatic embryogenesis (c) Suspension culture (d) Turbidostat  
(e) Protoplast (f) Micropropagation (g) Transgenic plant (7)

Q-2(a) Write short note on composition of plant tissue culture media. (5)

Q-2(b) Explain the process of micropropagation. (5)

Q-2(c) Give the applications of micropropagation. (4)

OR

Q-2(a) Describe the setup of plant tissue culture laboratory. (5)

Q-2(b) Explain isolation of single cells. (5)

Q-2 (c) Differentiate between physical &amp; biological methods of gene transfer. (4)

Q-3(a) Describe the technique of surface sterilization. (5)

Q-3(b) Explain methods for culture of protoplast. (5)

Q-3 (c) Differentiate between somatic hybridization &amp; somatic embryogenesis. (4)

OR

Q-3(a) Give the applications of plant tissue culture. (5)

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Q-3(b) Write short note on ovary culture. (5)

Q-3(c) Differentiate between callus & suspension culture. (4)

## SECTION-II

Q-4 Define the following:

(a) Vector (b) Agrobacterium (c) Liposome (d) Biolistic gun (e) Plasmid (f) Chemostat (g) Electroporation. (7)

Q-5(a) Explain physical methods of gene transfer (any two) (5)

Q-5(b) Explain the structure of the plasmid. (5)

Q-5(c) Give applications of transgenic plants. (4)

OR

Q-5(a) Write short note on growth regulators. (5)

Q-5(b) Describe the parts of T-DNA. (5)

Q-5 (c) Write note on sterilization of media. (4)

Q-6(a) Explain the steps in somatic embryogenesis. (5)

Q-6(b) Explain fusion of protoplast. (5)

Q-6(c) Differentiate between open & closed continuous culture. (4)

OR

Q-6(a) Write short note on suspension culture. (5)

Q-6(b) Explain Agrobacterium mediated gene transfer. (5)

Q-6 (c) Explain macroinjection & microinjection method. (4)

