

Bachelor of Science (B.Sc.) Fifth Semester
B.Sc. 3505 - Biotechnology: Paper-II (Plant Biotechnology)

P. Pages : 2

Time : Three Hours



GUG/W/18/1323

Max. Marks : 50

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw well labelled diagram wherever necessary.

1. What are suspension cultures? Write initiation and maintenance there off. 10

OR

Describe rapid clonal propagation in detail.

2. Describe in detail the process of hairy root formation. 10

OR

Describe in detail herbicide resistance with strategies involved in it.

3. a) Write the method for the maintenance of callus culture. 2½

b) Explain shoot tip culture. 2½

c) Explain the features of Ri plasmid. 2½

d) Give an account on Bt gene contributing to insect resistance. 2½

OR

e) Describe role of cytokinins in plant tissue media. 2½

f) Describe pollen culture with application. 2½

g) Describe biological methods for nuclear transformation. 2½

h) Discuss in short male sterile lines. 2½

4. a) Describe the role of components in plant tissue culture media. 2½

b) Discuss embryogenesis. 2½

c) Explain in short mechanism of DNA transfer. 2½

d) How long shelf life of fruits is achieved? 2½

OR

e) Describe the single cell clone technique. 2½

f) Describe organogenesis with suitable example. 2½

g) Explain the role of virulence genes. 2½

h) Explain the basis of tumor formation. 2½

5. Attempt **any ten** of the following.

a) What is callus culture? 1

b) Write any two role of auxin as growth hormone. 1

c) What is the use of gene gun. 1

d) What is cybrid? 1

e) Define micropropagation. 1

f) What is redifferentiation. 1

g) Define Gynogenesis. 1

h) Who introduced plant tissue culture technique. 1

i) What is protoplast culture. 1

j) Write the role of sulfonyl urea. 1

k) What are hybrid plants. 1

l) Write factor contributing to disease resistance. 1
