Bachelor of Science (B.Sc.) Fifth Semester

B.Sc. 3505 - Biotechnology: Paper-II (Plant Biotechnology)

P. Pages : 2 **GUG/W/18/1323**

Time : Three Hours * 1 0 3 6 * Max. Marks : 50

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**

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