

B.Sc.- III (C.B.C.S. Pattern) Sem-V
Biotechnology Paper-II - Plant Biotechnology

P. Pages : 2

Time : Three Hours



GUG/W/19/13127

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Describe in detail composition and preparation of plant tissue culture media. **10**

OR

a) Describe role of auxin as plant growth hormone. **2½**

b) Add a note on callus culture. **2½**

c) Describe maintenance of suspension culture **2½**

d) What are single cell clones. **2½**

2. Discuss shoot tip culture. **5**

Describe protoplast fusion. **5**

OR

2. a) Add a note on embryo rescue. **2½**

b) Give the method for production of virus free plants. **2½**

c) How the hybrid plants are regenerated? **2½**

d) Describe pollen culture. **2½**

3. Describe in detail mechanism of DNA transfer. **10**

OR

a) Give brief idea of chloroplast transformation. **2½**

b) Discuss Ti plasmids as vector. **2½**

c) Give biological method of nuclear transformation. **2½**

d) What are hairy roots. **2½**

4. Explain in detail role of coat protein mediated nucleocapsid gene in virus resistance. **10**

OR

- a) Describe the factors responsible for long shelf life of fluids. 2½
- b) Discuss about nematode resistance. 2½
- c) Add a note on Bt gene as biopesticide. 2½
- d) Explain the action of sulfonyl urea in herbicide resistance. 2½

5. Answer **any ten**. (1 mark each).

- a) Name any cell line used in tissue culture technique. 1
- b) Who introduced cell culture? 1
- c) What are Cytokinins? 1
- d) Define embryogenesis? 1
- e) Define Cybrid. 1
- f) What are haploid plants. Give example. 1
- g) How tumor formation takes place. 1
- h) What are Ri plasmids? 1
- i) Write the agents used in physical transformation of DNA? 1
- j) Define virus resistance? 1
- k) Give the factor responsible for disease resistance. 1
- l) What are male sterile lines? 1
