

B.Sc. (With Credits)-Regular-Semester 2012 Sem V
B.Sc.3505 - Biotechnology : Paper-II (Plant Biotechnology)

P. Pages : 2

Time : Three Hours



GUG/W/16/3355

Max. Marks : 50

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

1. Discuss the role of different plant growth hormones in plant tissue culture. 10

OR

Discuss the production of haploid plants using anther culture and pollen culture.

2. Discuss the biological and physical transformation methods for nuclear transformation. 10

OR

How disease resistance plants can be developed using plant tissue culture.

3. Write short note on :

- a) Callus culture. 2½
- b) Embryo culture 2½
- c) Chloroplast transformation 2½
- d) Herbicide resistance 2½

OR

- e) Suspension culture. 2½
- f) Organogenesis 2½
- g) Role of virulence genes 2½
- h) Male sterile lines 2½

4. a) Give the composition of MS medium. 2½
- b) Give the production of virus free plants using shoot tip culture. 2½
- c) Write short note on Ti plasmid. 2½
- d) How to improve long shelf life of fruits using plant tissue culture ? 2½

OR

- e) Write contribution of two scientists in plant tissue culture technique. 2½
- f) Write short note on regeneration of hybrid plants. 2½
- g) Give the mechanism of DNA transfer using Ti plasmid. 2½
- h) Write short note on Bt genes. 2½

5. Answer any ten.

- a) What are single cell clones ? 1
- b) Define callus culture. 1
- c) Give difference between callus culture and suspension culture. 1
- d) Define plant biotechnology. 1
- e) Give the role of virulence genes. 1
- f) Give one use of R₁ plasmid. 1
- g) Define protoplast fusion. 1
- h) Give one difference between embryo culture and protoplast culture. 1
- i) Define haploid plants. 1
- j) What is the effect of nematode on plants. 1
- k) What is the role of coat protein mediated nucleocapsid gene. 1
- l) Give the full form of Bt. 1
