

Roll No. ....

**94174**

**B.Sc. (Bio-Technology) 6th Semester  
(New Scheme) Examination – May, 2023**

**PLANT BIOTECHNOLOGY AND ENVIRONMENTAL  
BIOTECHNOLOGY**

**Paper : BT-604**

*Time : Three hours ]*

*[ Maximum Marks : 40*

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

*Note : Attempt five questions in all. Question No. 1 is compulsory and attempts any four questions selecting one question from each Unit.*

✓ 1. Describe the following terms in brief :  $1 \times 10 = 10$

- ✓ (i) Embryo rescue
- ✓ (ii) Shoot tip culture
- ✓ (iii) MS Medium
- ✓ (iv) Endosperm culture
- ✓ (v) Cybrids

- ✓(vi) Bioremediation
- ✓(vii) Wide hybridization
- (viii) Industrial effluents
- (ix) Assimilable nitrogen
- (x) Natural pesticides

### UNIT – I

- ✓2. Describe the different *in-vitro* methods like embryo culture, somatic embryogenesis and organogenesis. 7.5
3. Write short note on :
- (i) Micropropagation 3.5
  - (ii) Haploids and their applications 4

### UNIT – II

4. (a) What do you understand by cell suspension culture? What are applications of cell suspension culture? 3.5
- (b) Describe the process of protoplast isolation and regeneration. 4
- ✓5. What is somatic hybridization? Describe the different markers for the selection of hybrid cells. 7.5

### UNIT – III

- ✓ 6. Describe the microbiological quality of food and water. How it is important ? How pesticides and toxic chemicals are biodegraded by microorganisms ? Highlight the important microorganisms. 7.5
7. How the microorganisms help in the biodegradation of pesticides and toxic chemicals ? 7.5

### UNIT – IV

- ✓ 8. How thuringiensis toxin acts as natural pesticide ? What are other biological methods to control insects in agriculture fields ? 7.5
9. Write short note on :
- (a) Enrichment of ores by microorganisms 4
- (b) Biofertilizers 3.5
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