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Total No. of Questions : 11 ]

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# **BPF-2239**

**M.Sc. (Final) Examination, 2022**

**BIOTECHNOLOGY**

Paper - V

**(Cell and Tissue Culture)**

*Time : 3 Hours ]*

*[ Maximum Marks : 75*

**Section-A**

**(Marks : 2 × 10 = 20)**

*Note :-* Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

**Section-B**

**(Marks : 5 × 5 = 25)**

*Note :-* Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

**Section-C**

**(Marks : 10 × 3 = 30)**

*Note :-* Answer any *three* questions out of five (Answer limit **500** words). Each question carries **10** marks.

**Section-A**

1. (i) Define 'Callus'.
- (ii) Explain the role of 'Gottlieb Haberlandt' in plant tissue culture.
- (iii) Write the role of 'Skoog and Miller' in plant tissue culture.

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- (iv) What is hairy root culture ?
- (v) What are the differences between symmetric and asymmetric hybrids ?
- (vi) Define Clonal Propagation.
- (vii) Define Marker Gene.
- (viii) Write full name of RAPD, RFLP and AFLP.
- (ix) Give *two* examples of transgenic animals.
- (x) Write one cloning method in animal.

**Section-B**

2. What are Somaclonal Variations ? Give examples.

*Or*

Describe embryo rescue with examples.

3. Write a short note on germplasm conservation.

*Or*

Describe Floriculture Application.

4. Describe Elicitors.

*Or*

Discuss alkaloid production in plant tissue culture.

5. What are the differences between RFLP and AFLP ?

*Or*

What are the differences between RAPD and RFLP ?

6. Write a short note on microcarrier culture.

*Or*

Describe Histotypic Culture.

### **Section-C**

7. Write the history of plant tissue culture.
8. Describe the forestry application.
9. Describe alkaloid production in PTC.
10. What are the applications of plant tissue culture in the field of plant pathology ?
11. Describe the biology of culture cells.