

Exam. Code : 107405

Subject Code : 2230

B.Sc. (Biotechnology) 5th Semester

CONCEPTS OF PLANT TISSUE CULTURE

Paper : BT—2

Time Allowed—3 Hours]

[Maximum Marks—40

Note : Attempt all the questions

SECTION—A

Note :— Attempt **all** the parts. Answer to any part should not exceed **1/3** of a page. $8 \times 1 = 8$

1. (a) Define plant tissue culture.
- (b) Define re-differentiation.
- (c) Name the indirect methods of gene transfer.
- (d) What are auxins ?
- (e) Define macronutrients.
- (f) What is plant-explant-plant concept ?
- (g) What are plant growth regulators ?
- (h) What is biolistic method of gene transfer ?

SECTION—B

Note :— Attempt any **five** questions. Answer to any question should not exceed **2** pages. $5 \times 4 = 20$

2. Write a detailed account on plant nutrition in tissue culture.

3. Give an account of biosynthesis of gibberellins.
4. What are the various components and role of MS medium ?
5. Explain the cell de-differentiation in plant tissue culture.
6. Discuss briefly the indirect gene transfer methods.
7. Briefly explain physiological functions of abscisic acid.
8. Explain the procedure for direct (biolistics) method of gene transfer.
9. Write a short note on cellular totipotency and cell differentiation.

SECTION—C

Note :— Attempt any **two** questions. Answer to any question should not exceed **five** pages. $2 \times 6 = 12$

10. What is plant nutrition ? Name different plant tissue culture media used. What are macronutrients and micronutrients ? Discuss their deficiency symptoms.
11. Describe in detail, the physiological functions and biosynthesis of cytokinins.
12. Explain plant-explant-plant concept. Discuss various factors influencing plant tissue culture.
13. Write in detail, the indirect (agrobacterium mediated gene transfer) method of gene transfer.