

**B TECH**  
**(SEM VI) THEORY EXAMINATION 2017-18**  
**PLANT BIOTECHNOLOGY**

Time: 3 hours

Maximum marks: 100

**SECTION- A**

**1: Attempt all parts. All parts carry equal marks. (2x10=20)**

1. Define Acclimatization.
2. What is organized organ culture?
3. Define redifferentiation?
4. What is the role of gibberlins in the growth of plant?
5. Write any two secondary metabolites formed during plant tissue culture alongwith their uses?
6. List the physical factors affecting callus culture.
7. What do you understand by totipotency?
8. Define the term Gynogenesis.
9. What are the limitations of transgenic plants?
10. Differentiate between Organogenesis and Embryogenesis.

**SECTION- B**

**2: Attempt any three questions from this section. (10x3=30)**

1. Explain Protoplast Culture and Isolation of protoplast in detail.
2. Explain Androgenesis in detail.
3. Explain Bt-cotton in detail. What were its advantages and disadvantages?
4. What are phytohormones? Explain their role in the growth and development of plants.
5. Explain the various methods of measurement of growth of cultures.

**SECTION – C**

Note: Attempt all parts. All parts carry equal marks.

**3. Attempt any one part (10 marks)**

- a) Explain the concept of Somatic Embryogenesis. How is it different from Somaclonal variation?
- b) What are the suitable constituents for the plant culture medium? Explain the role of every single constituent used in the medium.

**4. Attempt any one part (10 marks)**

- a) What do you meant by Cryopreservation? Discuss the methodology used in preserving the explants in this technique.
- b) Explain the secondary metabolites in plant cultures alongwith their advantages, disadvantages and their industrial applications.

**5. Attempt any one part (10 marks)**

- a) Give an account on the composition of a plant tissue culture medium.
- b) Explain the concept of artificial seeds. Why are they important?

**6. Attempt any one part. (10 marks)**

- a) Give a detailed account on Acclimatization. How is it important from determinism?
- b) Explain the various techniques used for the isolation of single cell clone.

**7. Attempt any one part.**

**(10 marks)**

- a) Explain the application of plant tissue culture in transgenic plants for dealing with abiotic stresses.
- b) What are the applications of tissue culture for crop improvement in agriculture?