

April 2025
B.A./B.Sc.
Sixth Semester
CORE – 14
BOTANY
Course Code: BOC 6.21
(Plant Biotechnology)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Write a note each on any two of the following: 7×2=14
 - (a) Totipotency in plant tissue culture
 - (b) Protoplast isolation and fusion
 - (c) Germplasm conservation
2. Give an account on the application of plant tissue culture in forestry and agriculture. 7+7=14

UNIT-II

3. Discuss in detail the structure and function of yeast artificial chromosome. 14
4. Write a note each on any two of the following: 7×2=14
 - (a) Class III restriction endonucleases
 - (b) PUC 18
 - (c) Restriction mapping

UNIT-III

5. Discuss polymerase chain reaction in detail. 14
6. Write a note each on any two of the following: 7×2=14
 - (a) PCR mediated gene cloning
 - (b) Colony hybridization
 - (c) Genomic DNA library

UNIT-IV

7. Discuss the different gene transfer methods. 14
8. Write a note each on any two of the following: 7×2=14
- (a) T-DNA
 - (b) Reporter gene
 - (c) GUS

UNIT-V

9. Give an account each on the following: 7×2=14
- (a) Flavr Savr tomato
 - (b) Round-up ready soybean
10. Give an account each on any two of the following: 7×2=14
- (a) Human growth hormone
 - (b) Moondust carnation
 - (c) Biosafety concerns of GMO's.
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