

(i) Printed Pages: 3

Roll No.

(ii) Questions : 9

Sub. Code :

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Exam. Code :

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B.Sc. (Hons.) Biotechnology 4th Semester

1048

PLANT BIOTECHNOLOGY

Paper-BIOT-Sem-IV-III-T

Time Allowed : Three Hours]

[Maximum Marks : 67

Note :— Attempt **FIVE** questions in all, selecting **ONE** question compulsorily from each unit. Q. No. 1 is compulsory.

1. Discuss the following in brief :—

- (a) Co-integrated vector.
- (b) Infection pattern of *A. tumefaciens*.
- (c) PCR based genetic transformation of plants.
- (d) Caulimo-virus based vectors.
- (e) Golden rice.

5×3

UNIT—I

- 2. (a) Describe the method of chloroplast transformation, giving its advantages and disadvantages.
- (b) Discuss the role of suitable plant promoters in genetic transformation.

9,4

3. (a) What are reporter genes ? Discuss some important reporter genes used in selection and transformation of plants.
- (b) Discuss the salient features of mitochondrial genome.

9,4

UNIT—II

4. (a) Explain the various Cloning strategies by using Ti Plasmid.
- (b) Write a brief note on Ri plasmid. 9,4
5. (a) Discuss the techniques of Particle bombardment for DNA transformation in plants. What are its advantages over other methods used for direct DNA delivery ?
- (b) Briefly discuss Gene silencing in plants. 9,4

UNIT—III

6. (a) Describe the techniques by which you can improve the storage proteins in plants.
- (b) How can shelf life of fruits and flowers be increased ? 9,4
7. (a) How can herbicide resistant plants be raised for Triazine and Phosphinothricin ?
- (b) What are *cry* proteins ? Discuss their significance in brief.

9,4

UNIT—IV

8. (a) Explain giving suitable examples the production of industrially important products in plants.
- (b) Discuss the importance of edible vaccines over conventional vaccines. 9,4
9. (a) What are biodegradable plastics ? Discuss the manipulation of their metabolic pathways for enhancing and modifying their production in plants.
- (b) What are Plantibodies ? How are these obtained ? 9,4