(i) Printed Pages : 3

(ii) Questions : 9

Roll No. .....

Sub. Code : 0 9 7 9

Exam. Code : 0 0 3 6

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

(2053)

PLANT BIOTECHNOLOGY

Paper : BIOT–403–T

Time Allowed : Three Hours] [Maximum Marks : 67

Note :— Attempt **five** questions in all by selecting **one** question from each Unit. Question No. 1 is compulsory. All questions carry equal marks except Question No. 1.

1. Compulsory Question :

(1) Promoters for monocot plants. 2

(2) What are selectable markers ? Give examples. 2

(3) Structure of T-DNA. 2

(4) Role of vir G genes. 2

(5) What are Cry genes ? 2

(6) Define edible vaccine. 2

(7) What are Bioplastics ? 3

UNIT—I

2. (a) Discuss the structures of chloroplast and mitochondrial DNA. 7

(b) Explain the Binary vector and how is it developed ? 6

3. (a) Discuss the viral vectors and their benefits. 7

(b) Discuss the various selection markers and reporter genes used for selection of pant transformants. 6

UNIT—II

4. (a) Discuss the particle bombardment method of transformation and mention the advantages and disadvantages of the method. 6

(b) Describe the molecular mechanism of T-DNA transfer in plants. 7

5. (a) Describe the structure of Ti plasmid and how can it be converted into a vector to incorporate a foreign gene in the plants ? 6

(b) Discuss how transformants are screened and selected using various methods. 7

UNIT—III

6. (a) How are Glyphosate resistant plants developed ? Explain in detail. 7

(b) Write notes on :

(i) Bt cotton

(ii) Golden rice 6

7. (a) Discuss the various virus genes which can be used to develop viral resistant plants. 7

(b) How can you improve protein composition and content in plants using r-DNA technology ? 6

UNIT—IV

8. (a) How can you use plant cells as factories for the production of industrial enzymes ? 7

(b) What kind of genetic manipulation can be done in the metabolic pathways for production of fatty acids and industrial oils ? 6

9. What are edible vaccines ? Explain with examples how are they developed and what are their advantages and disadvantages ? 13