Exam.Code:0036
Sub. Code: 0979

2072

B.Sc. (Hons.) Biotechnology

Fourth Semester

BIOT- 403-T: Plant Biotechnology

Time allowed: 3 Hours

Max. Marks: 67

***NOTE**: Attempt <u>five</u> questions in all, including Question No. I which is compulsory and selecting one question from each Unit.*

x-x-x

I. Answer the following:-

a) Genes present in chloroplast DNA. (2)

b) What is microinjection? (2)

c) Role of Left and Right borders in T-DNA (2)

d) What is "Round up Maize"? (2)

e) Role of ACC synthase in fruit ripening? (2)

f) Define Edible vaccines? (2)

g) What is Acetosyringone and its role? (3)

UNIT - I

II. a) Describe the various promoters used for dicotyledonous and monocot plant transformation?

b) What are reporter genes? Explain the selectable marker genes with example? (7,6)

III. Describe the binary vector and co-integrate vectors and their applications? (13)

UNIT - II

IV. a) Discuss the electroporation method of transformation in plants and its advantages and disadvantages?

b) Discuss the PCR and hybridization method of selection of plant transformants? (7,6)

V. How are transformed plant cells selected, transgenic plants regenerated and maintained? (13)

P.T.O.

UNIT - III

VI. a) How is bacterial and fungal resistant plants developed using r-DNA technology? Explain with examples?

b) How are Cry proteins responsible for developing insect resistant plants? (7,6)

VII. Discuss the development of virus resistant plants using various types of viruses? (13)

UNIT - IV

VIII. a) With two examples of industrial enzymes explain how plant cells are used as factories for their production?

b) Write a note on using r-DNA technology to develop biodegradable plastics? (8,5)

IX. What kind of genetic manipulation can be done in the metabolic pathway to produce terpenoids and flavanoids? (13)

x-x-x