Exam.Code:0911
Sub. Code: 6723

1078
B.E. (Biotechnology)
Seventh Semester
BIO-703: Plant Tissue Culture

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Answer the following briefly:-

a) What is a compact callus?

b) Where are genes for opine synthesis present in Ti plasmid.

c) What is elicitation?

d) Intine and exine are components of_____.

e) Define totipotency.

f) Explain the role of suspensor in embryogenesis

g) Define vitrification.

h) Give application of somatic embryogenesis.

i) What is a protoplast?

j) What is the role of auxin in plant tissue culture? (10x1)

UNIT – I

II. a) Discuss the various techniques employed for culturing single cell.

b) Explain the process of shoot bud regeneration from the explant. (5,5)

III. a) Explain the important phases of Somatic Embryogenesis and factors affecting somatic embryogenesis.

b) Explain haploid and double haploid production from anther culture. (5,5)

IV. Describe the components of plant tissue culture media. Explain the function of each component. (10)

UNIT – II

V. Elucidate the different techniques for the secondary compounds production at an industrial level. (10)

P.T.O.

VI. Explain direct and indirect methods for gene delivery in plants. Give advantage of each method. (10)

VII. a) Elucidate in vitro fertilization with isolated plant gametes.

b) Describe the techniques used for long-term and short term storage of the cell cultures. (5,5)

x-x-x