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R-3837

M. Sc. (Int. Biotechnology) (Sem. VI) Examination

May / June – 2010

IBT 602 : Plant Biotechnology

Time : **3** Hours] [Total Marks : **70**

Instructions :

(1)

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ **M. Sc. (Int. Biotechnology) (Sem. VI)**

Name of the Subject :

☛ **IBT 602 : Plant Biotechnology**

☛ Subject Code No. : **3 8 3 7** ☛ Section No. (1, 2,.....) : **1&2**

Seat No. :

Student's Signature

(2) Figures to the right indicate full marks of the question.
(3) Draw neat and labeled diagrams whenever necessary.
(4) Both sections must be written in **separate** answer books.

SECTION-I

1 Discuss in detail about different levels of regulation of gene expression in eukaryotes. **10**

OR

1 Discuss the important aspects of nuclear, mitochondrial and chloroplast genomes. **10**

2 Write a detailed note on the inorganic and organic constituents present in general tissue culture media. **10**

OR

2 Discuss in detail protocol ensuring aseptic tissue preparation, inoculation and maintenance. **10**

3 Write short notes on : (any **three**) **15**

(a) C-value and C-value paradox
(b) Commercial applications of plant biotechnology
(c) Cryopreservation
(d) Plant Growth Regulators
(e) Cellular totipotency.

SECTION-II

4 Describe in detail the method of direct organogenesis. What are the advantages and disadvantages of this method over micropropagation through callus culture? **10**

OR

4 Discuss the applications of plant tissue culture techniques in agriculture, breeding and crop improvement. **10**

5 Explain the biosynthesis of some commercially important secondary metabolite along with schematic diagram. **10**

OR

5 Describe the methods of production of Biofuels; Bioethanol, Biohydrogen and Biomethane. **10**

6 Write short notes on : (any **three**) **15**

(a) Protoplast culture and its applications.
(b) Embryo rescue technique
(c) Virus free plant micropropagation
(d) Synthetic seeds
(e) Cryopreservation.
