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Total number of printed pages – 2

B. Tech
PCBT 4305

Sixth Semester Examination – 2013

PLANT BIOTECHNOLOGY

BRANCH : BIOTECH

QUESTION CODE : A 185

Full Marks – 70

Time : 3 Hours

*Answer Question No. 1 which is compulsory and any **five** from the rest.*

The figures in the right-hand margin indicate marks.

1. Answer the following questions : 2 × 10
- (a) What is terminator seed technology ? Write the role of RIP in this technology.
 - (b) What is surface sterilization ? Write the methods of surface sterilization of seed.
 - (c) What do you understand by biotransformation ? Give one example of biotransformation.
 - (d) Differentiate between totipotency and plasticity.
 - (e) What is suspension culture ? What are the different types of suspension culture ?
 - (f) What is Bergmann's plating techniques ? Why it is used ?
 - (g) What do you mean by Haploid plants ? Write their significance in plant improvement.
 - (h) What is Flavr Savr tomato ? Name the transgene used in the development of Flavr Savr tomato.
 - (i) What are selectable marker genes ? Give any two examples of selectable marker gene.
 - (j) How important are the secondary metabolites for the plant itself and for biotechnological applications ?

P.T.O.

2. Give the general features of tissue culture media composition, and discuss the roles of various growth regulators. How would you select a suitable medium for tissue culture of a given species ? 8+2
3. Write short notes on : 5×2
 - (a) Embryo rescue
 - (b) Electroporation.
4. Briefly explain : 4+3+3
 - (a) Truncated and modified cry genes
 - (b) Resistance to drought and other abiotic stress
 - (c) Binary and co-integrative vector
5. What do you understand by micropropagation ? Write the different pathways of morphogenesis in vitro ? 10
6. What are vector mediated method of genetic transformation ? Describe the organisation of Ti plasmid with special reference to its T-DNA and vir regulon. Explain the mechanism of T-DNA transfer from *Agrobacterium tumifaciens* to plant genome. 2+3+5
7. Briefly Explain : 5×2
 - (a) Single cell culture
 - (b) Secondary metabolite of plant origin.
8. (a) What is Somatic hybridisation ? What are the strategies used for screening and selection of somatic hybrid ? 5
 - (b) Give a brief account on activation tagging. 5