

Registration No. :

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Total number of printed pages – 2

B. Tech  
PCBT 4305

**Sixth Semester (Special/Back) Examination – 2013**

**PLANT BIOTECHNOLOGY**

**BRANCH : BIOTECH**

**QUESTION CODE : E 286**

**Full Marks – 70**

**Time : 3 Hours**

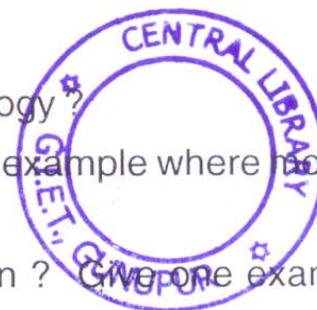
*Answer Question No. 1 which is compulsory and any **five** from the rest.*

*The figures in the right-hand margin indicate marks.*

1. Answer the following questions :

2 × 10

- Write the role of RIP in terminator seed technology ?
- What is molecular farming ? Give one suitable example where molecular farming has been successful.
- What do you understand by biotransformation ? Give one example of biotransformation.
- Write the name of different plant viruses used as vector for genetic transformation study.
- Difference between continuous and batch culture ?
- What is Gene gun method ? Why it is used ?
- What do you mean by Haploid plants ? What are different methods of preparation of synthetic seed ?
- What is golden rice ? Name the transgene used in the development of golden rice.
- What do you mean by Embryo rescue ?
- Define callus. Why callus is called a ghost tissue ?



P.T.O.

2. (a) Give the general features of tissue culture media composition, and discuss the roles of various growth regulators. 5  
 (b) Describe the methods of sterilization required for plant cell culture work. 5
3. Write short notes on : 5×2  
 (a) Role selectable marker in gene transformation  
 (b) Electroporation.
4. 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. 10
5. (a) What do you understand by micropropagation ? Write the different pathways of morphogenesis in vitro. 5  
 (b) What is somatic hybridization ? Write the procedure for screening and selection of somatic hybrid. 5
6. Briefly explain : 5+5  
 (a) Single cell culture  
 (b) Secondary metabolite of plant origin
7. (a) Bioreactor based production of secondary metabolites 5  
 (b) Give a brief account on Activation tagging. 5
8. Briefly explain (any **two**) : 5×2  
 (a) Truncated and modified cry genes  
 (b) Resistance to drought and other abiotic stress  
 (c) Binary and co-integrative vector  
 (d) Hairy root culture.

