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Total No. of Pages : 02

Total No. of Questions : 09

B.Sc. (Agriculture) (Sem.-7)

**PLANT TISSUE CULTURE AND TRANSFORMATION**

Subject Code : BSAG-PGB-706

M.Code : 77102

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A****Q1. Write briefly :**

- a) Growth Regulators with example.
- b) Artificial seeds.
- c) LMOs.
- d) Somaclonal Variants.
- e) Gelling Agents.
- f) Transient and Stable transgene expression.
- g) Explant and its Sterilization.
- h) Expression Vectors with example.
- i) Pollen Culture and Ovary Culture .
- j) Golden rice.

**SECTION-B**

- Q2. What are the risks posed by transgene to Human health and Environment?
- Q3. a) Define Reporter genes and its types with examples.
- b) What are the features of an ideal reporter gene?
- c) Out of *Hygromycin phosphotransferase* and *Green fluorescent protein* gene which is a scorable marker gene.
- Q4. By which technique, the copy number of a transgene could be detected? Explain its principle briefly.
- Q5. Genetic engineering of crop plants contributes towards foods for the future. Explain.
- Q6. a) Define Transgene and Transgenics.
- b) List any 4 good laboratory practices that need to be taken care of during genetic transformation experiment.
- c) List any 4 commercialized transgenic crop plants.

**SECTION-C**

- Q7. a) Enlist various approaches for gene transformation.
- b) Describe in details about particle gun mediated plant transformation. What are its advantages and limitations over *Agrobacterium* mediated transformation approaches.
- Q8. a) How Genetic engineering contributed towards production of Insect resistant plants?
- b) What is the principle behind conducting bioassays with transgenic plants?
- Q9. Define Biosafety. Enlist the name and functions of the competent authorities of National Biosafety Regulatory Framework governing Transgenics in India.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**