Roll No. | | | | | | | | | | | | | **Total No. of Pages: 02**

Total No. of Questions: 09

B.Sc.(Agriculture) (2014 & Onwards) (Sem. – 5)

PLANT TISSUE CULTURE AND GENETIC TRANSFORMATION

M Code: 74166

Subject Code: BSAG-502

Paper ID: [74166]

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

1. Write short notes on:

   a) Differentiation

   b) Redifferentiation

   c) Embryo

   d) Synthetic medium

   e) Biotransformation

   f) Secondary metabolites

   g) Protoplast

   h) Symmetric hybrids

   i) Clone

   j) Asymmetric hybrids

SECTION B

2. What is a somatic hybrid? Briefly write its applications in plant breeding?
3. Differentiate between embryogenesis and organogenesis.
4. What is meristem and Write its uses in PTC.
5. Write a note on *in vitro* fertilization.
6. What is Ti plasmid? Give its detailed structure and organization.

SECTION C

7. Explain regulatory mechanism for release of transgenic in India.
8. Briefly describe the various methods of transformation of plant cells and discuss their relative merits and limitations?
9. What is *in vitro* clonal propagation? How you can increase the profit of a commercial tissue culture laboratory.