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**RAN-2103001106020005****M.Sc. (Int.) Biotechnology (Sem. VI) Examination April - 2023****Plant Biotechnology****Time: 2 Hours ]****[ Total Marks: 50****સૂચના : / Instructions**

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

Name of the Examination:

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

Name of the Subject :

Plant Biotechnology

Subject Code No.: 2103001106020005

Seat No.:

Student's Signature

**Q-1. Define Briefly (Any Four)****[08]**

- Dedifferentiation & Redifferentiation
- Adventitious
- Callus
- Totipotency
- Encapsulation

**Q-2. Explain the following (Any Two)****[14]**

- Define various stages, applications and limitations of Micropropagation
- Differentiate between different components of MS and B5 media
- Mention laboratory requirement and general techniques for plant tissue culture

**Q3. Answer in detail (Any Two)****[14]**

- What is *in-vitro* embryogenesis? Explain and list out the differences between somatic and zygotic embryogenesis.
- What are Synthetic seeds? How they are prepared? What are its advantages?
- Briefly explain the term Cryopreservation and its applications.

**Q4. Attempt Any Two of the following**

**[14]**

- a) Discuss different methods of protoplast isolation and its purification.
  - b) What is Androgenesis and Gynogenesis? Give details of different factors affecting these techniques.
  - c) Explain Single cell culture in detail.
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