

**M. Sc. (Biotechnology) Sem-III (2012 Course)(Choice Based Credit
System) : SUMMER - 2019
SUBJECT : PLANT BIOTECHNOLOGY**

Day : Monday
Date : 08/04/2019

Time : 10.00 AM TO 01.00 PM
Max. Marks : 60

S-2019-1413

N.B.:

- 1) **Q.No.1 and Q.No.5 are COMPULSORY.** Answer **ANY TWO** from questions 2, 3, 4 and 6,7, 8.
- 2) Answers to both the sections should be written in **SAME** answer books.
- 3) Draw neat and labeled diagram **WHEREVER** necessary.
- 4) Figures to the right indicate **FULL** marks.

SECTION – I

- Q.1** Answer the following questions in brief: **[10]**
- a) Significance of plant diversity.
 - b) Extinct plant species with examples.
 - c) Marker assisted selection of plants.
 - d) Importance of hybrids.
 - e) Research areas in Plant Biotechnology.
- Q.2** Answer the following questions: **[10]**
- a) Describe biodiversity hot spots in India.
 - b) What are the objectives of modern plant breeding?
- Q.3** Explain the following: **[10]**
- a) Conservation strategies of plant diversity.
 - b) Bio-prospecting of plants for product development.
- Q.4** Write short notes on **ANY TWO** of the following: **[10]**
- a) Characterization of plant diversity
 - b) Methods of breeding in cross pollinated crops.
 - c) Pure line and mass selection of plants.

SECTION – II

- Q.5** Answer the following questions: **[10]**
- a) Describe phase wise applications of plant genetic engineering.
 - b) Explain strategies used to optimize secondary metabolite production.
- Q.6** Answer the following questions: **[10]**
- a) Describe the techniques of vector based gene transfer in plants.
 - b) Enlist seed industries and plant tissue industries in India.
- Q.7** Write short notes on the following: **[10]**
- a) Cryopreservation
 - b) Bio-fertilizers
- Q.8** Answer the following questions: **[10]**
- a) Homozygous plant production from microspore culture.
 - b) Callus culture for the extraction of secondary metabolites.

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