

M. Sc. (Biotechnology) Sem-III (2012 Course)(Choice Based Credit System) : WINTER - 2018

SUBJECT : PLANT BIOTECHNOLOGY

Day : Thursday
Date : 25/10/2018

W-2018-1211

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

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 **SEPARATE** answer books.
 - 3) Draw neat and labeled diagram **WHEREVER** necessary.
 - 4) Figures to the right indicate **FULL** marks.
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SECTION – I

- Q.1** Answer the following questions in brief: [10]
a) Definition of plant biotechnology.
b) Threatened and extinct plant species with examples.
c) Principles of modern plant breeding.
d) Plant diversity.
e) Heterosis.
- Q.2** Answer the following questions: [10]
a) Briefly explain biodiversity hot spots in India.
b) Write a note on the objectives of plant breeding.
- Q.3** Explain the following: [10]
a) *In vitro* conservation methods for plants.
b) What is bio-prospecting of plant diversity? Explain its advantages.
- Q.4** Write short notes on **ANY TWO** of the following: [10]
a) Molecular methods for characterization of plants.
b) Promoters.
c) Plant selection procedure following hybridization.

SECTION – II

- Q.5** Answer the following questions: [10]
a) Explain the techniques for gene transfer in plants and describe their applications.
b) Enlist the techniques for the production of secondary metabolites from cell culture.
- Q.6** Answer the following questions: [10]
a) Enlist seed industries in India and abroad.
b) Describe the techniques of vector based plant transformation.
- Q.7** Write short notes on the following: [10]
a) Bio-pesticides.
b) NBPGR.
- Q.8** Answer the following questions: [10]
a) Production of somatic hybrids.
b) Steps involved in somatic embryogenesis and artificial seed production.