

**MASTER OF SCIENCE (BIOTECHNOLOGY) (CBCS-2018 COURSE)**  
**M.Sc.(Biotechnology) Sem - III : WINTER :- 2021**  
**SUBJECT: PLANT BIOTECHNOLOGY**

Day : Thursday  
Date 27-01-2022

W-19757-2021

Time : 10:00 AM-01:00 PM  
Max. Marks: 60

**N. B. :**

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SAME** answer book.
- 4) Draw neat and labelled diagrams **WHEREVER** necessary.

**SECTION – I**

- Q. 1** Attempt **ANY FIVE** of the following: **(10)**
- a) Need for the conservation of plant diversity.
  - b) Advantages of protoplast technology.
  - c) Applications of Green Biotechnology.
  - d) Endangered medicinal plants of India.
  - e) Significance of hairy root culture.
  - f) Double haploid plants and their importance.
- Q. 2** Attempt **ANY TWO** of the following: **(10)**
- a) Explain Bioprospecting phases of medicinal plants.
  - b) Describe the technique of artificial seed production and their applications.
  - c) Discuss molecular technology to assess plant diversity.
- Q. 3** Write short notes on **ANY TWO** of the following: **(10)**
- a) Cost effective methods in Micropropagation.
  - b) Somaclonal variations. Give its advantages.
  - c) Plant cell reactors.

**SECTION – II**

- Q. 4** Attempt **ANY FIVE** of the following: **(10)**
- a) Genetically modified plants for green energy.
  - b) Role of *Agrobacterium* in plant cell transformation.
  - c) Commonly used reporter genes in molecular plant breeding.
  - d) Advantages of transgenic forest trees.
  - e) Edible vaccines and their significance.
  - f) Importance of DNA finger printing in plants.
- Q. 5** Attempt **ANY TWO** of the following: **(10)**
- a) What are the advantages and disadvantages of marker assisted crop improvement?
  - b) Write a note on chloroplast transformation.
  - c) Discuss direct methods for gene transfer in plants.
- Q. 6** Write short notes on **ANY TWO** of the following: **(10)**
- a) Status of genetically modified plants in India.
  - b) *In vitro* approaches for selection of biotic and abiotic stress tolerant plants.
  - c) Plant made pharmaceuticals.

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