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BOT–554

M.Sc. (Botany) IInd Year
Examination Dec., 2023

PLANT MOLECULAR BIOLOGY AND BIOTECHNOLOGY

Time : 2 Hours]   [**Max. Marks :** 70

Note **:–** This paper is of Seventy (70) marks divided into two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given there in. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.***

Section–A

(Long Answer Type Questions)   2×19=38

Note **:–** Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any *two* (02) questions only.

1. What is plant tissue culture ? Describe in vitro techniques and methods of organ culture.

2. Give a detailed notes on the structure and organization of eukaryotic genes and the regulation of gene expression.

3. Explain various cloning vectors and their role in genetic engineering.

4. What are molecular markers ? Describe the types and tools to identify molecular markers.

5. What is Biotechnology ? Describe its application, limitation and future perspective.

Section–B

(Short Answer Type Questions)   4×8=32

Note :– Section 'B' contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Describe the Intellectual Property Rights (IPR) and its importance.

2. Explain Polymerase Chain Reaction (PCR).

3. What is Genome ? Describe about chloroplast and mitochondrial genomes.

K–883   (2)

4. Write short notes on the following :

   (a) DNA library and

   (b) Restriction endonuclease

5. What is somatic hybridization ?

6. What are genomics and proteomics ? Write a detail note on its applications.

7. Write a short note on the impact of transgenic plants on human life.

8. Write a detailed on cryopreservation.

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