S-1052

Total Pages : 3 Roll No. .....

BOT-554

Plant Molecular Biology and Biotechnology

M.Sc. Botany (MSCBOT)

2nd Year Examination, 2022 (Dec.)

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 therein.

SECTION–A
(Long Answer Type Questions)

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.

(2×19=38)

1. Write a detailed essay on Intellectual Property Rights (IPR). Give two examples of IPR supporting Convention of Biological Diversity (CBD).

2. Define Polymerase Chain Reaction (PCR). Discuss its principle, procedure and applications.

3. What are molecular markers? Discuss RAPD and RFLP in detail.

4. In the context of biotechnology, discuss cryopreservation elaborating the concepts and its applications.

5. Discuss the procedure of anther, pollen and ovule culture along with its merits and demerits. What are their applications in crop improvement?

SECTION–B

(Short Answer Type Questions)

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. (4×8=32)

1. Discuss mitochondrial and chloroplast genomes in short.

2. Explain central dogma of molecular biology.

3. What are cloning vectors and what are their features. Name four (04) commonly used cloning vectors.

4. Write short notes on any *four* of the following :

(a) Exon Shuffling.

(b) C-value paradox.

(c) Application of genome study.

(d) Restriction Endonucleases.

(e) Post translational modification in eukaryotes.

5. Discuss the importance of transgenic plants.

6. What is Biosafety? Describe briefly Biosafety norms.

7. Discuss the methods of isolation of protoplast.

8. Briefly outline the stages of micropropagation. Write a short note on importance of micropropagation.
