A-868

Total Pages : 3 **Roll No. ----------**

MBOT-604

Plant Molecular Biology

M.Sc. Botany (MSCBOT)

3rd Semester Examination 2024 (June)

Time: 2:00 hrs Max. Marks: 35

Note : This paper is of Thirty Five (35) marks divided into Two (02) Section A and B. Attempt the questions contained in these sections according to the detailed given therein. Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

P.T.O.

Section-A (Long-Answer-Type Questions)

Note : Section 'A' contains Five (05) long-answer-type questions of Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only.

[2x9½=19]

Q.1. What is Genome? Give a detailed account on genome organization in higher plants.

Q.2. Describe the following:

a. Genome organization of chloroplast and its applications.

b. Genome organization of mitochondria.

Q.3. What are restriction enzymes and its types? Describe the mechanism of action of Type-II restriction endonuclease.

Q.4. What do you understand by cloning vectors? Describe in detail any two types of cloning vectors.

Q.5. Give a detailed account on polymerase Chain Reaction (PCR).

Section-B (Short-Answer-Type Questions)

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

[4x4=16]

Q.1. Discuss about the applications of restriction endonucleases.

Q.2. Write a short note on Random Amplified Polymorphic DNA (RAPD).

Q.3. Write a short note on any two:

a. Applications of molecular markers

b. SSRs or micro satellites

c. RAMP

Q.4. What are markers? Define its types and characteristics of an ideal marker.

Q.5. Describe the following:

a. Cloning

b. Applications of cDNA libraries

Q.6. Enumerate the differences between genomic and cDNA libraries.

Q.7. Write a brief account on YAC and BAC.

Q.8. Explain the following:

a. Nucleases

b. Polymerases

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