

**S-42**

Total Pages : 3

Roll No. ....

## **MBOT-604**

**Plant Molecular Biology**

M.Sc. Botany (MSCBOT)

3rd Semester Examination, 2022 (Dec.)

**Time : 2 Hours]**

**[Max. Marks : 35**

**Note :** This paper is of Thirty Five (35) 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 Nine and Half (9½) marks each. Learners are required to answer any Two (02) questions only.

(2×9½=19)

1. Describe the different mechanisms known for regulation of gene activity at the post transcriptional level in eukaryotes.

2. Discuss the basic principle and steps of RFLP marker. Write down its advantages and disadvantages.
3. Explain and describe polymerase chain reaction and gene amplification.
4. Describe the chromosome structure and organization.
5. What is molecular marker? How do physical maps differ from genetic maps, why? Describe briefly methods for physical mapping of molecular markers or DNA sequences.

## **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. (4×4=16)

1. What are genomic and cDNA libraries?
2. PCR has revolutionized molecular biology research. Justify this statement.
3. Write a brief note on restriction enzymes.
4. Write a note on mitochondrial genomes.

5. What is C-value paradox?
  6. Explain restriction endonucleases and their importance in genetic engineering.
  7. Define molecular probes and their labelling.
  8. Give brief note on enzymes used in cloning.
-

