

A-1222

Total Pages : 3

Roll No.

MBOT-604

M.Sc. Botany (MSCBOT)

Plant Molecular Biology

Examination February, 2026

Time : 2:00 Hrs.

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. *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) (2×9½=19)

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.

A-1222

(1)

P.T.O.

1. What is Chromosome ? Define its structure and organization.
2. What is non-repetitive and repetitive DNA ? Explain various types of repetitive DNA.
3. Write a detailed account on eukaryotic gene structure.
4. Give a detailed account on the eukaryotic transcription and translation.
5. What are restriction endonucleases ? Describe its types and applications in molecular biology.

Section–B

(Short Answer Type Questions) (4×4=16)

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.

1. Write a short note on Polymerase Chain Reaction (PCR).
2. Write short notes on any two of the following :
 - (a) DNA Kinetics
 - (b) Genome
 - (c) Gene amplification
3. Describe various applications of molecular markers

4. Describe the following (any *two*) :
 - (a) Applications of plasmid and cosmid vectors
 - (b) Genome Packaging
 - (c) Terminal Transferases
5. Discuss the significance of the genomic and cDNA libraries
6. Write brief notes on the following :
 - (a) SINEs
 - (b) LINEs
 - (c) Tandem repeats
 - (d) RAPD
7. Discuss the characteristics and applications of nucleases enzyme.
8. Explain the following :
 - (a) Ligases
 - (b) Gene Content
