

M.Sc. Sem.-3 Examination

502

Botany

March-2025

Time : 2-30 Hours]

[Max. Marks : 70

Q-1. Describe the Chromosome aberrations and ploidy. [14]

OR

Q-1(A) Write a note on FTO genes. [07]

Q-1(B) Explain the chloroplast genome. [07]

Q-2 Describe the process of translation in detail. [14]

OR

Q-2(A) Explain the genetic expression in prokaryotic organisms with examples. [07]

Q-2(B) Write a note on forms of DNA. [07]

Q-3 Describe the gene cloning. [14]

OR

Q-3(A) Explain microarrays. [07]

Q-3(B) Write a note on DNA barcoding. [07]

Q-4 Describe the seed certification and release of varieties. [14]

OR

Q-4(A) Write a note on WTO and its importance. [07]

Q-4(B) Write a note on nanomedicines. [07]

Q-5 Attempt any seven out of twelve. [14]

- 1) Differentiate the terms: Gene and Genome
 - 2) Give the difference between point mutation and frameshift mutation
 - 3) Explain the types of RNA
 - 4) What is recombination? Give its importance
 - 5) Define: Splicing
 - 6) Give the name and functions of any two enzymes that are useful in DNA replication.
 - 7) Explain the structure of a nucleotide.
 - 8) Give the importance of Southern blotting technique
 - 9) What is a molecular marker?
 - 10) Give the full form of IPR and NIH
 - 11) What are the benefits of patents?
 - 12) How are GMOs useful to humans?
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