

No. of Printed Pages : 3

MZO-002

M. SC. (ZOOLOGY) (MSCZOO)

Term-End Examination

June, 2025

**MZO-002 : GENETICS AND ANIMAL
BIOTECHNOLOGY**

Time : 2 Hours

Maximum Marks : 50

Note : (i) Attempt any **five** questions.

(ii) All questions carry equal marks.

1. (a) What is the difference between epistasis and pleiotropy ? Support your answer giving suitable example of each. 5

A-209/MZO-002

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- (b) How will you prepare a linkage map based on three factor mapping ? 5
2. Discuss in detail the procedure and application of southern blotting technique. 10
3. Describe the different syndromes associated due to changes in chromosome number in human beings. 10
4. Describe alternative splicing as a mechanism for regulation of gene expression in eukaryotes. Draw suitable diagrams to support your answer. 10
5. Describe the steps for the construction of the genomic DNA library. Mention its advantages and disadvantages. 7+3

[3]

6. Explain the mechanism of genome editing through CRISPR/Cas a technology with suitable diagram. How can CRISPR/Cas be applied in genetic engineering ? 5+5
7. Write short notes on the following :
- (a) Type II restriction endonucleases 5
- (b) Epigenetic modifications 5

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