

M. SC. (ZOOLOGY)

(MSCZOO)

Term-End Examination

December, 2025

**MZO-004 : SYSTEMATICS, BIODIVERSITY AND
EVOLUTION**

Time : 2 Hours

Maximum Marks : 50

Note : Attempt any ***five*** questions. All questions carry equal marks.

1. (a) Discuss the trends of evolution in the Post-Darwinism era. 5
- (b) Discuss the role of horizontal gene transfer in evolution. 5
2. Describe the RNA world hypothesis with the help of a well labelled diagram. 10

3. (a) Write the differences between molecular drive and molecular divergence. 4
- (b) How can 16S *r*-RNA gene sequence be used for the construction of the phylogenetic tree ? Explain. 6
4. Write short notes on the following : 5×2=10
- (a) Divergence of transcription system in bacteria and archaea
- (b) Role of transposable elements in bacterial evolution
5. (a) What is genetic drift ? Mention its significance in evolution. 5
- (b) Justify the significance of *Gemmata* sp. and *Giardia* sp. as a connecting link between prokaryotes and eukaryotes. 5
6. (a) How does alpha taxonomy differ from beta and gamma taxonomy ? 3
- (b) Discuss the different theories of biological classification. 7

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7. Describe the following : 5×2=10

- (a) Trends in general morphology during human evolution
- (b) Secondary and tertiary endosymbiosis

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