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MZO-004

M. Sc. (ZOOLOGY)

(MSCZOO)

Term-End Examination

June, 2026

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

Time : 2 Hours

Maximum Marks : 50

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

1. (a) Describe the philosophies regarding the
origin and diversity of life on Earth that
existed in the pre-Darwinian era. 5

- (b) Mention the different characteristics of plasmids. 5
2. Explain the key role of horizontal gene transfer in the evolutionary history of life citing examples from prokaryotes and eukaryotes. 10
3. Describe the molecular clock with a suitable example. Explain the reason for redefining the molecular clock hypothesis. Discuss the applications of the molecular clock. 5+2+3
4. Describe the origin of mitochondria and chloroplast through endosymbiosis with the help of a well-labelled diagram. 10
5. Explain briefly the four modes of speciation with the help of a diagram. 10

[3]

6. Write short notes on the following : $2 \times 5 = 10$

(a) Types of taxonomy

(b) Human evolution

7. Describe the following : $2 \times 5 = 10$

(a) Theory of spontaneous generation

(b) Phylogram and Cladogram

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