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MZO-004

M. SC. (ZOOLOGY)

(MSCZOO)

Term-End Examination

June, 2025

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

Time : 2 Hours

Maximum Marks : 50

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

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1. (a) Explain the propositions given in the
Darwinian theory of evolution. 6
 - (b) Write the applications of molecular
clock. 4

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2. (a) Explain the Urey Miller experiment with the help of a well labelled diagram. 6
- (b) Describe the hypothesis proposed for the origin of genetic code. 4
3. (a) Discuss the methods of inferring the evolutionary data. 5
- (b) Describe the different softwares used for phylogenetic tree reconstruction. 5
4. (a) How alternative splicing and exon shuffling have contributed to the evolution of eukaryotic genome ? 5
- (b) Classify the bacteria and archaea into various groups based on their preferred habitats giving suitable examples of each. 5

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5. Describe the origin of mitochondria and chloroplasts through endosymbiosis with suitable examples. 10
6. (a) Discuss in detail the five-kingdom systems of classification. 5
- (b) Write brief notes on sympatric and parapatric speciation. 5
7. Describe the following : 5+5
- (a) Genomic islands
- (b) History of evolution of *Homo sapiens*

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