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MZO-004

M. SC. (ZOOLOGY)

(MSCZOO)

Term-End Examination

December, 2024

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

Time : 2 Hours

Maximum Marks : 50

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

(ii) All questions carry equal marks.

1. Explain the fundamental principles of evolution that are the foundations of modern evolutionary biology. 10

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2. Describe the theory of spontaneous generation.
Discuss the Urey-Miller experiment and its conclusion. 5+5=10
3. (a) What is a phylogenetic tree ? Explain the key points about the phylogenetic tree with suitable examples. 5
- (b) How will you construct phylogenetic tree by using 16S rRNA gene sequence ? 5
4. What is molecular clock ? Explain its calibration with suitable examples. 10
5. Write short notes on the following : 5×2=10
- (a) Evolution of eukaryotic genome
- (b) Secondary and tertiary endosymbiosis
6. Describe the molecular and genetic basis of speciation. 10

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7. Describe the following : 5×2=10

- (a) Recent trends in human evolution
- (b) Consequences of horizontal gene transfer
in bacteria

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