No. of Printed Pages : 3 **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.*

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

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

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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