

Roll No.

Total Pages : 03

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May 2026

M. Sc. (Botany) (Fourth Semester)

Evolutional Biology (BOP-202-V)

Time : 3 Hours]

[Maximum Marks : 75

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What is Microevolution ? 1.5
- (b) Describe Monophyly. 1.5
- (c) What are reading trees ? 1.5
- (d) What are the fundamental concepts of geology ? 1.5
- (e) What do you mean by phylogeography ? 1.5

- (f) Define coefficient of selection. 1.5
- (g) Mention about non-adaptive traits. 1.5
- (h) What is molecular clock ? 1.5
- (i) What do you mean by graphic patterns ? 1.5
- (j) What is hybrid zones ? 1.5

Part B

- 2. (a) Describe the origin and evolution of traits across life and green plants. 10
- (b) Describe the Darwin and Wallace theory of natural selection. 5
- 3. (a) Describe the concept of maximum parsimony. 5
- (b) Describe major patterns of distribution and geography of life. 10
- 4. Describe the post-zygotic and pre-zygotic isolation in allopatry and sympatry. 15
- 5. (a) Discuss about the rates of evolution of organisms. 5

- (b) Discuss the role of fossil records in phylogenetic studies. 10
- 6. (a) Describe the reproductive isolation and other drivers of speciation. 10
- (b) Discuss about the forces of evolution. 5
- 7. Describe the species concepts and processes of speciation. 15

