B.Sc. 6th Semester (Honours) Examination, 2025 (CBCS)

Subject : Zoology

Course : CC-XIV

(Evolutionary Biology)

Time: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Group – A

1. Answer *any five* questions of the following: 2×5=10

   (a) Mention the key feature of the endosymbiont theory.

   (b) Mention the proposition of neutral theory of molecular evolution.

   (c) 'Mesozoic Era is the golden age of reptiles'.—Why?

   (d) Mention the significance of hybrid breakdown in species evolution.

   (e) Distinguish between convergent and divergent evolution with examples.

   (f) What is founder effect? Does it contribute to the changes in gene frequency?

   (g) Distinguish between stasipatric and parapatric modes of speciation.

   (h) List up the sources of genetic variations proposed in neo-Darwinism.

Group – B

2. Answer *any two* of the following questions: 5×2=10

   (a) What is meant by chemogeny? Describe it in brief. 1+4

   (b) Explain K-T mass extintion and comment on it's biological consequences. 4+1

   (c) Define Hardy-Weinberg (H-W) Law. Illustrate the conditions required in a population to maintain H-W equilibrium. 1+4

   (d) Enumerate the salient features of biological species concept (BSC). State its limitations. 3+2

Group – C

3. Answer *any two* of the following questions: 10×2=20

   (a) Explain different types of isolating mechanisms with suitable examples. Outline the main drawbacks of Darwinism. 8+2

   (b) Define genetic drift. How does it occur? What are the effects of drift in evolution? 1+3+6

(c) What is orthogenesis? Describe fossil records to explain evolution of horse. Is it orthogenetic? — Justify it. 1+7+2

(d) Define Darwinian fitness. Explain with graphs the three modes of natural selection. Define purifying selection. 2+6+2
