

U.G. 6th Semester Examination - 2022**ZOOLOGY****[HONOURS]****Course Code : BZOCCHC602****Course Title : Evolutionary Biology**

Full Marks : 30

Time : 2 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*

1. Answer any **ten** from the following: $1 \times 10 = 10$
- What evidence is there for RNA world?
 - Mention two features that distinguish hominidae from other primates.
 - Why did horses evolve to have single-toed hooves?
 - What is the beginning of a phylogenetic tree called?
 - Define subspecies.
 - How does migration affect genetic variation in a population?

[Turn over]

- What do you mean by monophyletic Phylogeny?
 - What are the main causes (two) of mass extinctions?
 - What is the hypothesis of endosymbiosis?
 - What is an advantage of using parsimony in phylogenetics?
 - What is gene pool?
 - What is the purpose of a molecular clock in evolutionary biology?
 - Define Mullerian mimicry.
 - What does the Hardy-Weinberg law state?
 - How Neo-Darwinism natural selection operates?
2. Answer any **five** from the following: $2 \times 5 = 10$
- How females choose their mates (In Bird)?
 - Define maximum parsimony.
 - Distinguish between Cladogenesis and Anagenesis.
 - What do you mean by geological time scale? What era are we currently in?

- e) What is K-T extinction?
- f) What do you mean by 'eugenics'?
- g) What is adaptive radiation and example?
- h) What is isolation mechanism? What are the 3 types of isolating mechanisms that lead to speciation?

3. Answer any **two** from the following: $5 \times 2 = 10$

- a) What is the biological speciation concept? What are different modes of speciation? Explain. $1 \frac{1}{2} + 3 \frac{1}{2} = 5$

- b) What is genetic drift? Does genetic drift affect large populations? What is bottleneck effect in evolution? $1 + 1 + 3 = 5$

- c) Explain the difference between Lamarck and Darwin's theory of evolution. Why was Darwin's theory more powerful? What is the neo-Darwinian theory of evolution? $3 + 1 + 1 = 5$
