

The University of Burdwan

B.Sc. Sem-6 Zoology (Hons.) Examinations, 2020

Paper Code: CC_14

(Evolutionary Biology)

Full Marks: 40

Time: 2Hrs

*Candidates are required to give their answer in the own words as far as
practicable*

$8 \times 5 = 40$

*Answer any **eight** questions of the following*

1. What is RNA World hypothesis? State its significance in origin of life.
2. What is vertical evolution? Briefly discuss the drawbacks of Darwin theory.
3. What is Hardy-Weinberg principle? In a population of 800 persons, 72 persons were observed as albino (aa). From this data, calculate allelic frequency of "A" and "a" and number of the heterozygotes (Aa) in the population.
4. What is 'Mitochondrial Eve'? Are Neanderthal our cousin or ancestors?
5. Are cladograms and phylogenetic tree same – write your opinion. How do you draw a simple phylogenetic tree?
6. What is Neutral Theory of Macroevolution? How does Neutral Mutation affect evolution? What is molecular clock hypothesis?
7. Discuss various types of Natural Selection as explained in synthetic theory.
8. Define fitness in the light of population genetics. Explain how the rate of mutation affects allele frequency.
9. The amino acid sequence of a protein X of 100 amino acids from organism A and B shows 20 variations. Fossil age determined by radioactive C method depicts their common ancestor lived about 10 million years ago. Calculate the rate of evolution from this data.
10. What is hominid? Briefly discuss the characteristic features of *Homo erectus*.