

FIVE YEAR INTEGRATED M.Sc., EXAMINATION 2022
SEMESTER - VII
Paper LS-4-7-5
Evolution

Time: Three Hours

Full Marks: 40

Questions are of value as indicated in the margin.
Answer **Question No.01** and **any three** from the rest.

1. Write short notes on **any five** of the following: 5 x 2 = 10
 - a. Struggle for existence
 - b. Drawback of Darwinism
 - c. Geological time scale
 - d. Mesozoic Era
 - e. Eras and Periods
 - f. Gene frequency and genotype frequency
 - g. RNA world
 - h. Evolutionary synthesis
2.
 - a) What is Oparine and Haldane's hypothesis of origin of life?
 - b) Describe the experimental proof in support of Oparine and Haldane's hypothesis (Miller, 1953). (6+4=10)
3.
 - a) Explain the major Era, Period and Epoch with their major events.
 - b) Which Eras are called "Era of Reptiles" and "Era of Man"? (8+2=10)
4.
 - a) What do you mean by molecular clock?
 - b) Explain the neutral theory of molecular evolution. (3+7=10)
5. Explain the different stages in Human evolution. 10
6.
 - a) What is Hardy-Weinberg principle?
 - b) Albinism is the phenotypic expression of a homozygous recessive genotype. One source estimates the frequency of albinos as in 1 in 18,000. What percentage of population is heterozygous for this gene?
 - c) Among a Jewish Community of Central European ancestry, about 1 in 3,600 children is borne with Tay-Sachs disease (an autosomal recessive condition). Derive what fraction of the individuals in this population are carrier. (2+4+4=10)