

FIVE YEAR INTEGRATED M.Sc., EXAMINATION 2023
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: 10 x 2= 20
 - a. Molecular clock
 - b. Gene frequency and genotype frequency
 - c. Gene duplication
 - d. Bottle neck effect
 - e. Neutral theory of evolution
 - f. Gene pool
 - g. Era of reptiles

 2. a. Describe the Miller experiment for synthesizing organic molecules in aerobic condition. (5)
b. What is natural selection and struggle for existence? (2.5+2.5=5)

 3. Explain the modern synthesis of evolution. (10)

 4. a. What is genetic drift and give salient features of it. (2+2=4)
b. Explain how gene frequency change in a small population affects more in comparison to a larger population. (6)

 5. a. Explain the cause of human evolution and trends in human evolution. (2.5+2.5=5)
b. Describe the different stages of human evolution. (5)

 6. a. What is Hardy-Weinberg Law? (2)
b. What is the frequency of heterozygotes Aa in a random mating population in which frequency of all dominant allele is 0.19? (4)
c. Albinism is an autosomal recessive trait. They are easily recognized by lack of pigment in skin, hair and iris. One source estimates the frequency of albinism as 1 in 10,000. What percentage of the population is heterozygous for this gene? (4)
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