

Paper / Subject Code: ZOC107 / Zoology - Molecular Biology & Evolution

ZOC 107

Total No. of Printed Pages:2

B.Sc. (CBCS) (Semester-V)
EXAMINATION NOVEMBER 2022
Zoology
Molecular Biology and Evolution

[Duration: 2 Hours]

[Total Marks :80]

Instruction:

1. All questions are compulsory.
2. Figures to the right indicate maximum marks to the question.
3. Draw diagrams wherever necessary.

1. Answer in brief any four of the following: 16 (4×4)
 - i) Explain bidirectional replication of DNA in eukaryotes.
 - ii) List the types of eukaryotic RNA polymerases and mention their specific functions.
 - iii) Comment on the role of aminoacyl synthetases in protein synthesis.
 - iv) Explain the role of the first base of anticodon in anticodon-codon base pairing.
 - v) Explain the elongation step of translation in eukaryotes.
 - vi) What is a repressible operon? Explain with a suitable example.
2. Write notes on: (any Four) 16 (4×4)
 - i) Microevolution
 - ii) Contribution of Weismann to theories of evolution
 - iii) Frame shift mutations
 - iv) Pre-adaptations
 - v) Salient features of Hardy-Weinberg equilibrium
 - vi) Parallel adaptations
3. A) Write a note on Mismatch repair in Eukaryotes. 6

OR

A) Explain the processing of tRNA. 6
B) Elaborate on RNA editing. 6
4. A) Explain the ribosome structure in prokaryotes. 6

OR

A) Describe the initiation step of protein synthesis in eukaryotes. 6
B) Write a note on genetic imprinting. 6
5. A) Write a note on allopatric speciation. 6

OR

A) Elaborate on Neo-Darwinism. 6
B) Write a note on post-mating isolating mechanisms. 6

6. A) Describe the formation of fossils.
OR
A) Discuss polyploidy and its role in evolution.
B) Write a note on gene pool.

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