

**2023**  
**B.A./B.Sc.**  
**Fifth Semester**  
CORE – 11  
**ZOOLOGY**  
*Course Code: ZOC 5.11*  
(Molecular Biology)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Illustrate the Meselson and Stahl experiment to prove semiconservative replication of DNA. 14
2. Write notes on the following: 7×2=14
  - (a) RNA Primers
  - (b) Hershey and Chase experiment

**UNIT-II**

3. Describe the mechanism of transcription in eukaryote. 14
4. Write notes on the following: 7×2=14
  - (a) Transcription unit
  - (b) Processing of rRNA

**UNIT-III**

5. Explain the process of protein synthesis in prokaryote. 14
6. Write the genetic code representing various amino acids in tabular form. Add a note on its main characteristics features. 9+5=14

**UNIT-IV**

7. Explain in detail the mechanism of RNA splicing. 14

8. Write notes on the following: 7×2=14  
(a) Split gene  
(b) Shuffling of exon

### UNIT-V

9. Explain the different types of DNA damage. 14
10. Write notes on the following: 7×2=14  
(a) Transcription regulation in prokaryote  
(b) Pyrimidine dimerization
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