2024
B.A./B.Sc.
Fourth Semester
CORE – 8
BOTANY
Course Code: BOC 4.11
(Molecular Biology)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

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

UNIT–I

1. Define DNA denaturation and renaturation. In a sample containing a mixture of highly, moderately, and unique repetitive DNA, what information would one get from a descending CoT curve upon denaturation and renaturation. 6+8=14

2. Write notes on the following: 7×2=14
   (a) tRNA
   (b) Euchromatin and heterochromatin

UNIT–II

3. Elaborate DNA replication in bacteria. 14

4. Write notes on the following: 7×2=14
   (a) End replication of lagging strand in eukaryotic DNA
   (b) Role of β and γ polymerases

UNIT–III

5. Supporting your answer with diagrams, dissect bacterial transcription. 14

6. Write notes on the following: 7×2=14
   (a) Attenuator
   (b) RNAi

UNIT–IV

7. Provide a detailed account on how introns are excised during RNA maturation. Additionally, discuss on 5' and 3' modification. 6+4+4=14

8. Write notes on the following: 7×2=14
   (a) Guide RNA insertion
   (b) Ribozymes

UNIT–V

9. Elaborate on eukaryotic protein synthesis. 14

10. Write notes on the following: 7×2=14
    (a) Shine Dalgarno sequence
    (b) Polypeptide chain elongation