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(20524) Roll No.-
B.Sc. (Bio-Tech)-II Year.

NS-3466

B.Sc. (Bio-Technology)

Examination, May-2024

MOLECULAR BIOLOGY

(B-203)

B.Sc. (Bio-Tech)

Time : 3:00 Hours] [Maximum Marks : 50

Note : Attempt any **five** questions. **All** questions carries equal marks. Draw diagrams wherever necessary.

1. Explain Watson-Crick double helix model for structure of DNA. Describe the features of A, B and Z forms of DNA. 10
2. Describe the clover leaf secondary structure of tRNA. Give a comparison between the stages of Translation in prokaryotes and eukaryotes. 10

10
P.T.O.

3. Give name and function of polymerases involved in replication of eukaryotic genomes. Describe the initiation and elongation states of replication in eukaryotes. 10
4. Write a detailed note on homologous and non homologous DNA repair mechanisms. 10
5. Write short notes on: 2.5×4=10
 - (i) Chromosome ultra structure
 - (ii) C value paradox
 - (iii) Differences between structure of prokaryotic and eukaryotic genes.
 - (iv) Pseudogenes
6. Explain process of Transcription initiation, elongation and termination in eukaryotes. 10

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7. Write short notes on: 10
- (i) m RNA degradation
 - (ii) Pribnow box
 - (iii) Rho dependent transcription termination
 - (iv) Catabolite Repression
8. Give the general structure of Insertion elements and transposons found in bacteria. Describe the transposable elements of Drosophila and Maize. 10
9. Discuss the regulation of gene expression in eukaryotes at level of transcription and post-transcription. 10
10. What do you understand by repressible operon? Describe the general structure and mechanism of gene regulation by Tryptophan operon. 10