2025

(FYUGP)

(4th Semester)

BOTANY

(MAJOR)

Paper : BCC–8

(Molecular Biology)

Full Marks : 75
Pass Marks : 40%

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. Explain in detail the organization of DNA in eukaryotes with diagrammatic representation. 15

Or

2. Write notes on the following : 7½×2=15

(a) Structure of RNA

(b) Hershey and Chase experiment

3. Explain in detail the replication of DNA in eukaryotes with suitable diagram. 15

Or

4. Write short notes on the following : 7½×2=15

   (a) RNA priming

   (b) Types of DNA replication

5. Discuss the discovery of mRNA template. Add a note on central dogma. 15

Or

6. Explain Crick's wobble hypothesis on genetic code deciphering. Add a note on the salient features of genetic code. 7½+7½=15

7. Explain in detail the mechanism of gene expression in *E. coli* bacteria with special reference to tryptophan synthesis. 15

Or

8. With suitable diagrammatic representation, explain the detailed mechanism of transcription in prokaryotes. 15

9. Write notes on the following : 7½×2=15

   (a) Splicing pathway

   (b) Pre-mRNA processing

Or

10. Write notes on any *two* of the following : 7½×2=15

    (a) Aminoacylation of tRNA

    (b) Inhibitor of protein synthesis

    (c) Post-translational modification of proteins

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