

2025

(FYUGP)

(4th Semester)

BOTANY

(MAJOR)

Paper : BCC-8

(Molecular Biology)

Full Marks : 75

Pass Marks : 40%

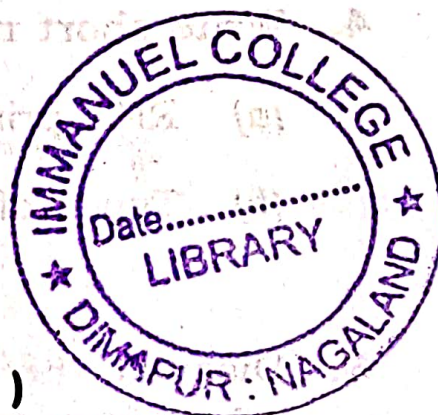
Time : 3 hours

***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: $7\frac{1}{2} \times 2 = 15$
- (a) Structure of RNA
- (b) Hershey and Chase experiment



(2)

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

Or

4. Write short notes on the following : $7\frac{1}{2} \times 2 = 15$

- (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. $7\frac{1}{2} + 7\frac{1}{2} = 15$

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

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(Continued)

(3)

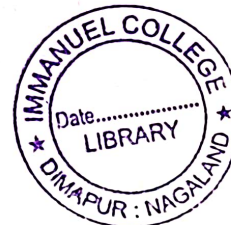
9. Write notes on the following : $7\frac{1}{2} \times 2 = 15$

- (a) Splicing pathway
(b) Pre-mRNA processing

Or

10. Write notes on any two of the following : $7\frac{1}{2} \times 2 = 15$

- (a) Aminoacylation of tRNA
(b) Inhibitor of protein synthesis
(c) Post-translational modification of proteins



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Bs/BCC-8