

S.No. 3800

16 SCCMB 7

(For candidates admitted from 2016–2021 Batch)

B.Sc. DEGREE EXAMINATION, NOVEMBER 2023.

Part III — Microbiology – Major

**MOLECULAR BIOLOGY AND MICROBIAL
GENETICS**

Time : Three hours

Maximum : 75 marks

PART A — (10 × 2 = 20)

Answer ALL questions.

1. Gene
2. Z-DNA
3. DNA Helicases
4. 'Okazaki fragments'
5. Primases
6. Pribnow box
7. Start codon
8. Operon
9. Mutagenesis
10. Spontaneous mutation

PART B — ($5 \times 5 = 25$)

Answer ALL questions, choosing either (a) or (b).

11. (a) What is plasmid? Explain on different types of plasmid.

Or

- (b) Write three dimensional structure of DNA proposed by Watson and Crick.

12. (a) What are the different types of prokaryotic DNA polymerases and its function?

Or

- (b) Define theta mode of replication mechanisms.

13. (a) Elucidate the general features of genetic code.

Or

- (b) Give a brief account of transcription stages.

14. (a) Elucidate cellular machinery required for protein synthesis.

Or

- (b) Discuss mating process of F Factor.

15. (a) Narrate the excision repair mechanism in *E.coli*.

Or

- (b) Give an account on Ames test.

PART C — ($3 \times 10 = 30$)

Answer any THREE questions.

16. Discuss on prokaryotic chromosome structure.
17. Write a note on enzymes involved in DNA replication.
18. Write a note on translation.
19. What is transduction? Give a detailed account on generalized transduction process.
20. Define mutation. Add a note on types of mutagen.