D 90117 (Pages : 2) Name...

Reg. No....................................

FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020

(CUCBCSS—UG)

Biotechnology

BTY 5B 07—MOLECULAR BIOLOGY

Time : Three Hours Maximum : 80 Marks

Section A

Answer any **two** *questions.*
Each question carries 10 *marks.*

1. Explain the experiments which prove DNA as the genetic material.

2. Explain in detailed about protein synthesis in eukaryotes.

3. Write a detailed account on DNA replication in eukaryotes.

4. Explain the negative and positive regulation of gene expression in prokaryotes using lac operon as an example.

(2 × 10 = 20 marks)

Section B

Answer at least **seven** *questions.*
Each question carries 5 *marks.*
All questions can be attended.
Overall ceiling 35.

5. Explain the gene structure in prokaryotes.

6. Describe the proteosome.

7. Write a note on properties of genetic code.

8. Give an account on mRNA splicing.

9. Explain the transposition in prokaryotes.

10. Briefly explain the homologus recombination.

11. Give an account on pseudogenes.

12. Write a brief note on central dogma of molecular biology.

Turn over

13. Explain the types of chromosomes.

14. Write a note on DNA topology.

15. Explain the process of chromatin structure regulation.

16. Describe the nucleosome.

17. Explain the enzymes involved in DNA replication

18. Give a note on DNA excision repair system.

(7 × 5 = 35 marks)

Section C

*Answer at least **three** questions.*
Each question carries 5 marks.
All questions can be attended.
Overall ceiling 15.

19. Explain the architecture of DNA.

20. Write the differences between introns and exons.

21. Give short notes on r-RNA.

22. Explain the transversion.

23. Mention the salient features of DNA replication.

(3 × 5 = 15 marks)

Section D

*Answer **all** questions.*
Each question carries 2 marks.

24. Write the function of DNA topoisomerase.

25. Write the role of t-RNA in translation process.

26. Define: Transition.

27. What is DNA recombination ?

28. What is termination process ?

(5 × 2 = 10 marks)