

FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2019**(CUCBCSS-UG)****Biotechnology****BTY 5B 07—MOLECULAR BIOLOGY****Time : Three Hours****Maximum : 80 Marks****Section A***Answer any two out of four questions in about 1,500 words.**Each question carries 10 marks.*

1. Define : Chromosome. Explain the morphology and structural organization of chromosome.
2. Explain the various steps involved in protein synthesis in Eukaryotes.
3. Explain in detailed about DNA repair mechanism.
4. Explain the post transcriptional modification of mRNA and rRNA.

(2 × 10 = 20 marks)**Section B***Answer any seven out of fourteen questions in about 750 words.**Each question carries 5 marks.*

5. Give an account on regulation of gene expression in prokaryotes.
6. Give an account on eukaryotic genome.
7. Explain the translational level control of eukaryotic gene expression.
8. Give a brief note on elongation process of eukaryotes.
9. Describe the excision repair mechanism of DNA.
10. Write a note on central dogma of molecular biology.
11. Give an account homologous recombination.
12. Write a brief note on chaperons.
13. Give an account on post translational modification of proteins.
14. Write a brief note on repeated DNA sequences.
15. Explain the physical and chemical features of Watson and crick model of DNA.
16. Give a brief note on lac operon.

Turn over

17. Give an account on point mutation.
18. Write the salient features of eukaryotic DNA replication.

(7 × 5 = 35 marks)

Section C

Answer all questions in about 300 words.

Each question carries 3 marks.

19. Mention the importance of rRNA in translation.
20. Differentiate between promoter and operator sequences.
21. Distinguish the replication process of prokaryotic and eukaryotic system.
22. Explain the structure of tRNA.
23. Give the functions of rRNA.

(5 × 3 = 15 marks)

Section D

Answer all questions in about 200 words.

Each question carries 2 marks.

24. What are okazaki fragments?
25. Write the function of chaperons.
26. What is DNA topoisomerase?
27. Define : Translation.
28. What is transposition?

(5 × 2 = 10 marks)