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(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 homologous 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)