

FOURTH SEMESTER B.Sc. (L.R.P.) DEGREE EXAMINATION, APRIL 2016

(CUCBCSS—UG)

Common Course

MBY 4A 08—MOLECULAR BIOLOGY AND BIOINFORMATICS

Time : Three Hours

Maximum : 80 Marks

Section A*Answer all the questions.**Each carries ½ mark.*

1. The codon UGA is
2. "transforming principle" that Griffith observed was
3. The consensus sequence which form Shine-Dalgarno sequence is
4. Large subunit of ribosome is prokaryote is
5. Databases consisting of data derived experimentally such as nucleotide sequences and three dimensional structures are known as ?
6. Tryptophan acts as _____ of *trp* operon.
7. Number of structural genes of *lac* operon is ?
8. Diameter of B-DNA is ?
9. α -amanitin is _____ to RNA polymerase I.
10. Part of DNA polymerase I without 5' -4 3' exonuclease activity is ?
11. Mutation when cause a codon to code for a different amino acid, it is called ?
12. Unwinding of DNA double helix at the replication fork is carried out by ?

(12 x ½ = 6 marks)

Section B*Write short notes on all the questions.**Each carries 2 marks.*

13. PDB.
14. tRNA.
15. Mutation.
16. Okazaki fragments.
17. Pribnow box.
18. BLASTN.
19. Nucleotide.

Turn over

20. Topoisomerase.
21. Nucleotide excision repair.
22. FASTA.

(10 x 2 = 20 marks)

Section C

*Write notes on any six questions.
Each carries 5 marks.*

23. Describe molecular docking and its applications.
24. Describe *trp* operon.
25. Explain histones and their functions.
26. Explain genetic code and its importance.
27. Describe DNA repair mechanisms.
28. Describe regulation of *lac* operon.
29. Explain Hershey-Chase experiment.
30. Describe Cot curve and applications of cot curve analysis.

(6 x 5 = 30 marks)

Section D

*Answer any two questions.
Each carries 12 marks.*

31. Write an essay on applications of bioinformatics.
32. Describe replication of prokaryotic DNA.
33. Explain transcription in prokaryotes.

(2 x 12 = 24 marks)