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' -43' 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 $\frac{1}{2}$ = 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.

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)