



K21U 0156

Reg. No. :

Name :



VI Semester B.Sc. Degree (CBCSS-Reg./Supple./Improv.)

Examination, April 2021

(2014 – 2018 Admissions)

CORE COURSE IN ZOOLOGY

6B10ZLG : Molecular Biology and Bioinformatics

Time : 3 Hours

Max. Marks : 40

Instructions : Answer may be written either in **English** or in **Malayalam**.
Give illustrations **wherever** necessary.

SECTION – A
(Molecular Biology)

- I. Answer **any one** : 8
- 1) Explain the mechanism of transcription. Add a note on post transcriptional modifications.
 - 2) What is genetic code ? Explain the characteristics of genetic code.
 - 3) Write an essay on DNA repair.
- II. Answer **any one** : 4
- 4) Explain Lac operon.
 - 5) Give an account on semiconservative replication of DNA.
- III. Answer **any three** : (3×2=6)
- 6) Comment on central dogma of molecular biology.
 - 7) What are ribozymes ? Give an example.
 - 8) What are split genes ?
 - 9) What is Spliceosome ?
 - 10) What are Okazaki fragments ?
 - 11) Write a short note on reverse transcription.
- IV. Answer **any two** of the following : (2×1=2)
- 12) DNA polymerase was discovered by
A) Nirenberg B) Kornberg C) Crick D) Okazaki

P.T.O.



- 13) Protein synthesis does not require
 A) Ribosomes B) Primer C) mRNA D) rRNA
- 14) Anticodon is present in
 A) DNA B) mRNA C) tRNA D) rRNA
- 15) Which of the following is an initiation codon ?
 A) AUG B) UUU C) UAA D) UUC

SECTION - B
 (Bioinformatics)

V. Answer **any one** :

8

- 16) Write an essay on biological databases.
 17) Explain the tools and applications of proteomics.
 18) Briefly describe the history, development and applications of bioinformatics.

VI. Answer **any one** :

4

- 19) Explain the steps involved in multiple sequence alignment.
 20) Give an account on major database search engines.

VII. Answer **any three** :

(3×2=6)

- 21) What is BLAST in bioinformatics ?
 22) Mention any two methods of DNA sequencing.
 23) Comment on micro arrays.
 24) What is CLUSTAL W ?
 25) Name any two protein sequence databases.
 26) Expand the abbreviations.
 a) NCBI b) DDBJ

VIII. Answer **any two** of the following :

(2×1=2)

- 27) An example for a secondary database is _____.
 28) _____ is a database search engine from NCBI.
 29) In proteomics 2D-PAGE is used to _____.
 30) _____ is a nucleic acid database.
 31) Who is the 'mother' of bioinformatics ?