

Code No. : 30422 E Sub. Code : AEMI 53

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

Fifth Semester

Microbiology

Major Elective - II - BIOINFORMATICS

(For those who joined in July 2020 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A relational database consists of a collection of _____
- (a) Tables (b) Fields
(c) Records (d) Keys

6. Which of the following is incorrect statement about Tree-searching methods?
- (a) The choice of the first three taxa can be random.
(b) Parsimony method examines all possible tree topologies to find the maximally parsimonious tree
(c) It starts by building a three taxa unrooted tree, for which only one topology is available.
(d) This is different than exhaustive search method

7. _____ is a collection of genes.
- (a) Proteome (b) Genome
(c) Motifs (d) Folds

8. The formation of mRNA from DNA is know as _____
- (a) Translation (b) Transcription
(c) Protein synthesis (d) None of the above

9. Which of the following statement best describes a lead compound?
- (a) A compound that contains the element lead
(b) A compound from the research laboratory that is chosen to go forward for pre clinical and clinical trails
(c) A molecule that shows some activity or property of interest and serves as the starting point for the development of a drug
(d) The first compound of a structural class of compounds to reach the market.

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2. The tuples of the relation can be of _____ order.
- (a) Any (b) Same
(c) Sorted (d) Constant
3. Which one of the following is not a benefit of BLAST?
- (a) Speed (b) Statistical rigor
(c) Handling of gaps (d) More sensitive
4. Which of the following is not a form of RNA?
- (a) tRNA (b) rRNA
(c) mRNA (d) qRNA
5. The descriptions of morphological traits, are often _____ which are due to _____.
- (a) Ambiguous, multiple gene factors
(b) Lucid, more than one genetic factors
(c) Clear, multiple genetic factor
(d) Ambiguous, one or two genetic factors

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10. β -pleated sheets are the examples of _____
- (a) Primary structure
(b) 2° structure
(c) 3° structure
(d) Quaternary structure

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) What are the advantages of encrypted data transfer?

Or

- (b) Give a short note on mode of data transfer methods.

12. (a) Discuss about FASTA method.

Or

- (b) Explain in detail of DDBJ.

13. (a) Describe about Global sequence alignment.

Or

- (b) Write a short note on phylogenetic trees.

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[P.T.O.]

14. (a) Give an account on prokaryotic genome with illustration.

Or

(b) Define transcriptome and explain it.

15. (a) Comment on protein motifs.

Or

(b) Explain about Homology modeling.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Discuss in detail of RDBMS.

Or

(b) Comment on Relational databases.

17. (a) Describe about Biological databases.

Or

(b) Give an account on Gene banks.

18. (a) Explain in detail of sequence alignment.

Or

(b) Write a note on scoring matrices.

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19. (a) Discuss in detail of MALDI -TOF spectrometry.

Or

(b) Give a note on 2-D gel electrophoresis.

20. (a) Explain about structure of proteins.

Or

(b) Describe in detail of drug discovery and design.

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