

(6 pages)

Reg. No. : .....

Code No. : 7547

Sub. Code : ZMBM 31

M.Sc. (CBCS) DEGREE EXAMINATION,  
NOVEMBER 2023.

Third Semester

Microbiology – Core

BIOINFORMATICS AND BIostatISTICS

(For those who joined in July 2021 - 2022 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. The identification of drugs through the genomic study is called,
- (a) Genomics (b) Pharmacogenomics  
(c) Pharmacogenetics (d) Cheminformatics

2. Proteomics refers to the study of,
- (a) Set of proteins in a specific region of the cell  
(b) Biomolecules  
(c) Set of proteins  
(d) The entire set of expressed proteins in the cell.
3. The term bioinformatics was coined by \_\_\_\_\_
- (a) J.D. Watson (b) Pauline Hogeweg  
(c) Margaret Dayhoff (d) Frederic Sanger
4. In laboratory work using computers and associated with web-based analysis generally online is referred to as \_\_\_\_\_
- (a) In silico (b) Dry lab  
(c) Wet lab (d) All of the above
5. Which of the following is a sequence alignment tool provided by NCBI?
- (a) Chime (b) BLAST  
(c) FASTA (d) Clustal W

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6. The alignment procedure that tries to align regions with high level of matches without considering the alignment of rest of the sequences is,
- (a) Multiple sequence (b) Pair wise alignment  
(c) Global alignment (d) Local alignment
7. Procedure of aligning many sequences simultaneously is called, as
- (a) Multiple sequence alignment  
(b) Pair wise alignment  
(c) Global alignment  
(d) Local alignment
8. The square of standard deviation is called as
- (a) Quartile deviation  
(b) Mean absolute deviation  
(c) Range  
(d) Variance
9. In regression analysis independent variable is also known as,
- (a) Regressor  
(b) Predictor  
(c) Explanatory variable  
(d) All of above

10. Which is NOT probability sampling technique?
- (a) Simple random Sampling  
(b) Stratified random Sampling  
(c) Cluster random Sampling  
(d) Quota sampling

PART B — (5 × 5 = 25 marks)

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

11. (a) Define search engines? Illustrate the four types of search engines.
- Or
- (b) Distinguish Unix and Linux.
12. (a) Explain the annotating and analysing genome sequences.
- Or
- (b) What is genbank used for? Add note on its features.
13. (a) Describe swiss prot data base. And how it is useful.
- Or
- (b) Define biochemical pathway databases. Add note on its features.

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14. (a) Define mean, median and mode with suitable examples.

Or

(b) Describe the measures of dispersion.

15. (a) Define probability and distribution with suitable examples.

Or

(b) Give an account on students t test.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Write an essay about basics of computer.

Or

(b) Explain the resources for finding and accessing scientific papers.

17. (a) Explain the BLAST and FASTA analysis.

Or

(b) Describe the multiple sequence alignments.

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18. (a) List out the importance of protein data bank.

Or

(b) Explain the protein modelling, and add a note on 3D structure.

19. (a) Write an essay about the collection and presentation of data.

Or

(b) Describe about variance and standard deviation with suitable examples.

20. (a) Write a detailed account on ANOVA with suitable examples.

Or

(b) Write a detailed account on inferential statistics.

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