

**M.Sc. II Semester Degree Examination, September/October - 2022****BOTANY****SEC-2 21BOT2S2LP : Bioinformatics and Applications in Biology**

Time : 1 Hour

Maximum Marks : 30

1. Margaret Dayhoff developed the first protein sequence database called :
  - (a) SWISS PROT
  - (b) PDB
  - (c) Atlas of protein sequence and structure
  - (d) Protein sequence databank
2. Which of the following is a protein sequence database ?
  - (a) DDBJ
  - (b) EMBL
  - (c) GenBank
  - (d) PIR
3. STAG is maintained by :
  - (a) Brookhaven Laboratory
  - (b) DNA database of Japan (DDBJ)
  - (c) European Molecular Biology Laboratory (EMBL)
  - (d) National Centre for Biotechnology Information (NCBI)
4. The information retrieval tool of NCBI Genbank is :
  - (a) Entrez
  - (b) STAG
  - (c) Sequin
  - (d) Text Search
5. Which of the following is a sequence alignment tool ?
  - (a) BLAST
  - (b) PRINT
  - (c) PROSITE
  - (d) PIR
6. The identification of drugs through the genomic study is called :
  - (a) Genomics
  - (b) Pharmacogenomics
  - (c) Pharmacogenetics
  - (d) Cheminformatics
7. The process of finding the relative location of genes on a chromosome is called :
  - (a) Gene tracing
  - (b) Genome walking
  - (c) Genome mapping
  - (d) Chromosome walking
8. 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



9. The 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
10. SCOP is :
- (a) It is primary database  
(b) It is nucleotide sequence database  
(c) SCOP database is a hierarchical classification of protein 20 domain structures  
(d) Structural database, which identify structural and evolutionary relationships
11. GenBank and SWISSPROT are examples of :
- (a) Primary database            (b) Secondary database  
(c) Composite database            (d) None of these
12. GenBank is maintained by :
- (a) EBI            (b) NIG            (c) NCBI            (d) SIB
13. Which of the following is a metabolic database ?
- (a) PIR            (b) PDB            (c) KEGG            (d) OMIM
14. The scientific discipline concerned with naming organisms is called :
- (a) Taxonomy            (b) Cladistics  
(c) Binomial nomenclature            (d) Systematics
15. PDB stands for :
- (a) Protein Data Bank            (b) Protein database  
(c) Protein derived base pair            (d) None of these
16. Phylogenetic relationship can be shown by :
- (a) Dendrogram            (b) GenBank  
(c) Data retrieval tool            (d) Data search tool
17. Proteomics is the study of :
- (a) Set of proteins  
(b) Set of proteins in a specific region of the cell  
(c) Entire set of expressed proteins in a cell  
(d) None of the above
18. PDB is :
- (a) Primary database for macromolecules  
(b) Can be determined by gel electrophoresis  
(c) Composite database  
(d) Database for three dimensional structure of biological macromolecule



19. Which of the following does not describe local alignment ?
- (a) A local alignment aligns a substring of the query sequence to a substring of the target sequence
  - (b) A local alignment is defined by maximising the alignment score, so that deleting a column from either end would reduce the score, and adding further columns at either end would also reduce the score
  - (c) Local alignments have terminal gaps
  - (d) The substrings to be examined may be all of one or both sequences; if all of both are included then the local alignment is also global
20. Which database of pfam is having high quality data ?
- (a) pfam A
  - (b) pfam B
  - (c) pfam C
  - (d) pfam D
21. The process of finding relative location of genes on a chromosome is called :
- (a) Gene tracing
  - (b) Genome mapping
  - (c) Genome walking
  - (d) Chromosome walking
22. Which of the following is an example of homology and similarity tool ?
- (a) BLAST
  - (b) RasMol
  - (c) EMBOSS
  - (d) PROSPECT
23. A comprehensive database for the study of human genetics and molecular biology is :
- (a) PDB
  - (b) STAG
  - (c) OMIM
  - (d) PSD
24. Which of the following scientists created the first bioinformatics database ?
- (a) Dayhoff
  - (b) Pearson
  - (c) Richard Dubin
  - (d) Michael J Dunn
25. Which of the following is the first completed and published gene sequence ?
- (a)  $\phi$ x174
  - (b) T4 phage
  - (c) M13 Phage
  - (d) Lambda Phage
26. BankIt and Sequin are sequence submission tools in :
- (a) DDBJ
  - (b) PDB
  - (c) GenBank
  - (d) EMBL
27. Science of managing and analyzing biological data using advanced computers :
- (a) Bioinformatics
  - (b) Genomics
  - (c) Forensics
  - (d) Human genome project



28. The study of all of an organism's proteins, including its identity, structure, interaction and abundance :
- (a) Proteomics
  - (b) Bioethics
  - (c) Bioinformatics
  - (d) Human genome project
29. When did Smith-Waterman first describe the algorithm for local alignment ?
- (a) 1950
  - (b) 1970
  - (c) 1981
  - (d) 1925
30. Which of the following are not the application of bioinformatics ?
- (a) Drug designing
  - (b) Data storage and management
  - (c) Understand the relationships between organisms
  - (d) None of the above

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