PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2023
(Fourth Semester)

Branch – APPLIED MICROBIOLOGY

DISCIPLINE SPECIFIC ELECTIVE – II: INTRODUCTION TO BIOINFORMATICS

Time: Three Hours   Maximum: 50 Marks

SECTION-A (5 Marks)
Answer ALL questions
ALL questions carry EQUAL marks   (5 x 1 = 5)

1   Each record in a database is called an--------------------.
    (i) Entry   (ii) File
    (iii) Record   (iv) Ticket

2   The alignment procedure that tries to align the entire sequence is------------.
    (i) multiple sequence alignment   (ii) pairwise alignment
    (iii) Global alignment   (iv) local alignment

3   The phylogenetic tree represents evolutionary relationship among species and also called as-------------------.
    (i) Genetic tree   (ii) Evolutionary tree
    (iii) Ploycystric tree   (iv) Polysaccharide tree

4   Which of the following is correct regarding gene ontology?
    (i) need to standardize protein function   (ii) limited molecular functions
    (iii) Facilitate grouping of protein   (iv) Biological processes not involved

5   The identification of drugs through the genomic study is called-------.
    (i) Genomics   (ii) Pharmacogenomics
    (iii) Pharmacogenetics   (iv) Cheminformatics

SECTION - B (15 Marks)
Answer ALL Questions
ALL Questions Carry EQUAL Marks   (5 x 3 = 15)

6   a   Discuss in brief note on db-tables as a mode of data storage.
               OR
    b   State out the importance of PDB with suitable examples.

7   a   Evaluate the impacts of global sequence alignment with suitable explanation.
               OR
    b   Briefly explain about Substitution matrices.

8   a   Illustrate in brief about rooted phylogenetic tree.
               OR
    b   Analyse the importance of Maximum parsimony.

9   a   Distinguish wet and dry experiments with suitable examples.
               OR
    b   Discuss in brief about significance of EST clusters in functional annotation.

10   a   State out the importance of protein structure prediction.
               OR
    b   Determine about metabolomics and add a note on its advantages.

SECTION -C (30 Marks)
Answer ALL questions
ALL questions carry EQUAL Marks   (5 x 6 = 30)

11 a   Analyze the importance of various mode of database search.
OR
   b   Give critical comment on file formats for DDBJ.

12 a   Explain in brief note on suitable scoring method for sequence alignment.
OR
   b   Criticize the impacts of pairwise sequence alignment.

13 a   State out Basic concepts of phylogenetic analysis.
OR
   b   Expand UPGMA and explain its advantages.

14 a   Predict the advantages of predictions and simulations.
OR
   b   Recommend strategies for whole genome annotations.

15 a   Determine in brief note on tertiary RNA predictions with suitable examples.
OR
   b   Distinguish a brief note on Genomics and transcriptomics.

Z-Z-Z   END