

SH-V/MCB-503/DSE-1/19

B.Sc. 5th Semester (Honours) Examination, 2019-20

MICROBIOLOGY

Course ID : 52216

Course Code : SH/MCB/503/DSE-1

Course Title : Bio Informatics

Time: 1 Hour 15 Minutes

Full Marks: 25

*The figures in the right hand side margin indicate full marks.
Candidates are required to give their answers in their own words
as far as practicable.*

1. Answer *any five* of the following questions: 1×5=5
 - (a) What is domain?
 - (b) Expand RDBMS.
 - (c) Name two data submission tools used in bio informatics.
 - (d) What do you mean by data integration?
 - (e) Distinguish between scoring matrices and series matrices.
 - (f) Name one software used for MSA linked with EMBL.
 - (g) Mention two criteria to be a good biological database.
 - (h) What do you mean by molecular phylogeny?

 2. Answer *any two* of the following questions: 5×2=10
 - (a) Define bio informatics? What are the branches of bio informatics? Write about the significance of bio informatics in Microbiology. 1+1+3=5
 - (b) What is sequence alignment? Distinguish between global and local alignment. Differentiate PAM and BLOSUM. 2+1+2=5
 - (c) What is the principle of 2D-gel electrophoresis? Write a short note on Gene Bank. 2+3=5
 - (d) What is CADD? What are the basis of molecular drug design? Name one software by which drug designing is done? Expand BLAST. 1+2+1+1=5

 3. Answer *any one* question: 10×1=10
 - (a) Define phylogenetic tree. Write a short note on any two methods of phylogenetic tree construction. Differentiate between cladogram and dendrogram. 2+(3+3)+2=10
 - (b) What is Ramachandran plot? What is its significance? How do you predict the 3D structure of proteins by homology modelling? 2+2+6=10
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