

Department of Computer Science
School of Engineering Sciences and Technology
Jamia Hamdard, New Delhi, 110062
M.Sc. (Computational and Systems Biology and Bioinformatics)
Exam-Second Semester-2023
Paper: Advanced Algorithm for Bioinformatics
Paper Code: MCSB-202

MM: 60

Time:2-1/2 Hours

Section-A [5x4=20]

Answer **ALL** question

S.No.	Question	CO	BL
1	What is the distance scoring matrix? What is its significance?.	CO2	2
2	State the difference between a “profile” and a “motif”?	CO3	1
3	Discuss the application of graph theory in Bioinformatics.	CO4	4
4	Differentiate the double digest and partial digest problem?	CO3	4

Section-B [10x4=40]

Answer any **FOUR** questions

S.No	Question	CO	BL
1	What are Brute-Force and Branch-Bound algorithms? Explain with examples.	CO2	5
2	Write Brute-Force Motif search Algorithm.	CO5	2
3	Discuss Euler’s and Hamiltonian cycle algorithms in DNA restructuring.	CO3	4
4	Given the two following strings. Find the longest common subsequence present in the given strings in the same order. String-1: AECFDEF and String-: BACGDGBF	CO4	6
5	What do you mean by complexity of DNA problem and their simulatory simulation? Explain with examples.	CO2	2
6	Write short notes on: 1. DNA hybridisation techniques. 2. Challenges in gene identification	CO2	1