

IV SEMESTER B.TECH. EXTERNAL EXAMINATIONS APRIL 2019 SUBJECT: INTRODUCTION TO BIOINFORMATICS [BIO 3282] Date of Exam: 07/05/2019 Time of Exam: 2.00 PM – 5.00 PM Max. Marks: 50

Instructions to Candidates:

✤ Answer ALL the questions & missing data may be suitable assumed

1A.	Describe a brief history of emerging of Bioinformatics in the recent past.						
1B.	Give the steps in searching and retrieving the Saccharomyces cerevisiae genome from NCBI genome database.						
1C.	"If Genome is the genetic information in a cell and is in DNA form, how this genetic information is transferred to proteome form which is functional. Explain.						
2A.	A teacher explains as proteins have modular design and also proteins has modular nature. What is your understanding about the teacher's explanation as a student?						
2B.	Elucidate the importance of statistical significance of sequence alignment in assessing the degree of similarity.						
2C.	Discuss about the effect of sensitivity while using different scoring matrices like BLOSUM45 and BLOSUM80 in a sequence alignment.						
3A.	To view the structural features of the protein structure use the different display options available in RASMOL and label any 4 different structural features visualized specifically in the given structure.	5					

	Given is a pattern illustration of a protein domain, translate the pattern representation								
3B.	into descriptior	۱.					5		
	P-x(2)-G-E-S-G(2)-[AS]								
4A.	Construct a parspecies provide Feature Lungs Jaws Feathers Gizzard	rsimonious pred. Lamprey 0 0 0 0 0	Antelope + + 0 0 +	e based on orga Bald eagle + + + +	Alligator + + 0 +	eatures of the Sea bass 0 + 0 0 0	3		
4B.	Discuss about the significance of bootstrapping in phylogenetic tree evaluation, analyze the given phylogenetic tree based on the bootstrap values in the given phylogenetic tree. $\int \frac{95 \text{ Seal}}{\text{ Bear}} \int \frac{100 \text{ BlueWhale}}{\text{ BlueWhale}} \int 100 \text{ Blu$								
4C. 5A.	Elaborate on features of any four tools for phylogenetic analysis in PHYLIP. Discuss about the significance of comparative genomics in the post genome								
5B.	sequencing steps.								
	Explain in detail about the methods and approaches applied in Genome annotation.								
5C.	compress it using a referential algorithm.								