PSG COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2024

(Second Semester)

Branch -BIOTECHNOLOGY

BIOINFORMATICS

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EOUAL marks $(10 \times 1 = 10)$

		ALL questions carry EQUAL marks (10		
Module No.	Question No.	Question	K Level	со
1	1	an online, searchable, database of research literature in the biomedical and life sciences. a) PDB b) PIR c) SWISS PROT d) Medline	K1	CO1
	2	Which of the following is a protein sequence database? a) DDBJ b) PIR c) EMBL d) Gen bank	K2	CO1
2	3	is the current method of choice to infer phylogenetic trees. a) Rodistics b) Audistics c) Zodistics d) Cladistics	K1	CO3
	4	The BLAST program was developed in a)1992 b)1995 c)1990 d)1991	K1	CO2
3	5	Which database provides information on gene regulatory elements, such as enhancers and promoters? a) GenBan b) dbSNP c) ENCODE d) FlyBase	K1	CO1
	6	Vec Screen is a primarily aimed for a) Detect bacterial vector sequences b) Detect viral vector sequences c) Sequence Assembly d) None of the above	K2	CO4
4	7	Which software tools are commonly used for Homology modelling? a) PYMOL and VMD b) Microsoft office suit c) AutoCAD d) None of the above	K1	CO5
	8	A protein visualization tool is a) RASMOL b) Phylogenetic tree c) Protein prediction d) None of the above	K2	CO5
5	9	Which of the following is a flybase? a) Biodiversity database b) Model organism database c) Literature databse d) Insect database	K1	CO4
	10	The computational methodology that tries to find the best match between two molecules, a receptor and a ligand is a) Molecular matching b) Molecular docking c) Molecular modelling d) None of the above	K2	CO5

SECTION - B (35 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

 $(5 \times 7 = 35)$

Module No.	Question No.	Question	K Level	СО
1	11.a.	Explain the features and types of RDBMS.		
	(OR)		K4	CO1
	11.b.	Outline the differences between NCBI, DDBJ, Gen bank and EMBL.		
2	12.a.	How PAM matrix used in bioinformatics?	K5	
		(OR)		CO2
	12.b.	Explain the BLOSUM and write its applications.		
	13.a.	Outline the tools for restriction mapping especially Neb cutter.		
3		(OR)	K6	
	13.b.	Explain the concept of Genome Annotation with few tools as example.		
	14.a.	How can the DALI database contribute to protein structure comparision?	K6	CO4
4		(OR)		
	14.b.	Differentiate CATH and SCOP In terms of classification approach.		
	15.a.	Outline the technologies used for System Biology.	K5	00-
5		(OR)		CO5
	15.b.	How Docking can be used in bioinformatics? Explain.		1

SECTION -C (30 Marks)

Answer ANY THREE questions

ALL questions carry EQUAL Marks

 $(3 \times 10 = 30)$

Module No.	Question No.	Question	K Level	СО
1	16	How is markup language different from programming language? Differentiate markup language and a compiled language.	K5	CO2
2	17	List out the softwares used for the construction of Phylogenetic tree with special reference to PHYLIP.	K6	CO4
3	18	What is the role of primers and probes in PCR? How do you identify forward and reverse primers in PCR?	K6	соз
4	19	Outline the steps involved in threading.	K6	CO4
5	20	Describe the role of IPR in Bioinformatics.	K5	CO5