Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 90004

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2024

Seventh Semester

Biotechnology

U19BT726 – PROTEOMICS AND GENOMICS

(Regulation 2019)

Time: Three Hours | Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	What are introns and exons? How you identify them in a sequence of DNA?	2	K3	CO1
2.	What is biological database? Name any two sequence database.	2	K1	CO1
3.	Explain SNPs. Give any two applications.	2	K1	CO2
4.	What is linkage analysis? How it is useful for Genomics?	2	K3	CO2
5.	What is SAGE? Give its principle.	2	K1	CO3
6.	How you identify protein-protein interactions. Name atleast two methods.	2	K3	CO3
7.	What is microRNA libraries?	2	K1	CO4
8.	Describe the use of Pharmacogenetics in medicine.	2	K3	CO4
9.	What is KEGG pathway? How it is useful?	2	K3	CO5
10.	What is metagenomics?	2	K1	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	Explain in detail about the structural organization of genome in prokaryotes and eukaryotes.	13	K2	CO1

(OR)

	b)		Explain the steps in accessing and retrieving genome sequences from biological database.	13	K3	CO1
12.	a)	i.	Explain the DNA finger printing with neat sketch.	13	K3	CO2
		ii.	What is RAPD? Explain in detail.			
			(OR)			
	b)	i.	Explain the principle and working of PCR.	13	K2	CO2
		ii.	What is genetic mapping? Explain in detail.			
13.	a)	i.	Explain 2-D electrophoresis of proteins.	13	K2	CO3
		ii.	Explain the protein identification using LC/MS-MS.			
			(OR)			
	b)	i.	Explain the yeast two hybrid system.	13	K2	CO3
		ii.	What is MALDI-TOF? Explain its principle and working with neat sketch.			
14.	a)	i.	Discuss in detail about the steps involved in drug development & pharmacogenetics.	13	K3	CO4
		ii.	Explain about personalized medicine.			
			(OR)			
	b)	i.	What is high throughput genome screening? Explain its application in drug discovery.	13	K3	CO4
		ii.	Explain in detail about the identification of gene targets.			
15.	a)	i.	What is systems biology? Explain in detail with examples.	13	K2	CO5
		ii.	Explain in detail about transcriptomics.			
			(OR)			
	b)		Explain detail about the protein micro array.	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	A researcher has isolated a microorganism from soil. The microorganism is pure culture in nature. What technique can be used to identify the unknown microbe? Explain the technique in detail.	15	K4	CO2
		(OR)			
	b)	Explain the protein sequencing using Edman degradation method with neat sketch. Using this technique, how you will identify the unknown sequence of a protein isolated from plant.	15	K4	CO3