

Reg.No.:

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

Question Paper Code: 120012

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

Third Semester

Biomedical Engineering

U19BM303 - FUNDAMENTALS OF BIO CHEMISTRY

(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.	Define the principle of viscosity.	2	K2	CO1
2.	How water acts as a biological solvent?	2	K2	CO1
3.	Define isomerism.	2	K1	CO2
4.	Classify carbohydrates and give an example for each.	2	K2	CO2
5.	Compare Reichert- Meissl number and iodine number.	2	K2	CO3
6.	Differentiate simple and derived lipids. Give an example for each.	2	K2	CO3
7.	List the properties of amino acids.	2	K1	CO4
8.	Define dihedral angles.	2	K1	CO4
9.	State the significance of Michaelis-Menten equation.	2	K1	CO5
10.	How does temperature and pH affect the enzymatic activity?	2	K3	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	Explain in detail the Handerson-HasselBalch equation.	13	K2	CO1
	(OR)			
b)	Describe the different types of physiological buffers.	13	K2	CO1
12. a)	Elucidate glycogenesis and glycogenolysis and its hormonal regulation.	13	K2	CO2
	(OR)			
b)	Explain in detail the TCA cycle.	13	K2	CO2
13. a)	Describe the hormonal regulation of fatty acid metabolism.	13	K2	CO3
	(OR)			
b)	Discuss the nomenclature of fatty acid.	13	K2	CO3
14. a)	Explain the Watson and Crick model of DNA.	13	K2	CO4
	(OR)			
b)	Elucidate the structure of RNA and its type.	13	K2	CO4
15. a)	Elaborate enzymatic inhibition and its types with neat illustration.	13	K2	CO5
	(OR)			
b)	Explain the classification of enzymes with examples.	13	K2	CO5

PART – C

(1 x 15 = 15Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	Explain the principle, instrumentation and mechanism of SDS electrophoresis for protein separation.	15	K2	CO4
	(OR)			
b)	Explain the clinical application of electrolytes and radioisotopes.	15	K2	CO1