U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

January 2024 Semester End Main Examinations

Programme: B.E. **Semester: VII**
Branch: Biotechnology **Duration: 3 hrs.**
Course Code: 19BT7BSBIE **Max Marks: 100**
Course: Biology for Engineers

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

			UNIT - I	CO	PO	Marks
1	a)		Compare and contrast prokaryote and eukaryote cells with examples. Depict their structure and label the parts.	CO1	PO 1	**10**
	b)		Explain the following : i. Vitamins ii. Enzymes	CO1	PO1	**10**
			OR			
2	a)		Elaborate on general classifications and important functions of carbohydrates.	CO1	PO 1	**10**
	b)		"Nucleic acids make up the genetic makeup of all living organisms". Comment on the statement by providing the structural details and functions.	CO1	PO 1	**10**
			UNIT - II			
3	a)		Describe in detail account the various modes of enzyme inhibition with graphical representations.	CO2	PO 1,2	**10**
	b)		Elaborate on : i. Enzyme structure and classification ii. Cofactors	CO2	PO 1,2	**10**
			UNIT - III			
4	a)		Depict the basic structure of antibody and label the parts.	CO3	PO 1,2	**5**
	b)		State the importance of microbiology.	CO3	PO 1,2	**5**
	c)		Explain the mechanism of T-cell activation in detail.	CO3	PO 1,2	**10**
			UNIT - IV			
5	a)		"This device is made up of a transducer and a biological element that may be an enzyme, an antibody or a nucleic acid". Substantiate the statement by providing the principle and suitable applications.	CO4	PO 1,2	**10**

		b)	Explain the significance of bioinformatics and its current applications in detail.	*CO4*	*PO 1,2*	**10**
			OR			
	6	a)	Give detailed classification of nanobiomolecules with relevant examples.	*CO4*	*PO 1,2*	**10**
		b)	Provide various characterization techniques involve for the structural elucidation of nano particles.	*CO4*	*PO 1,2*	**10**
			UNIT - V			
	7	a)	Elaborate on the basics of genetic engineering by stating its applications.	*CO4*	*PO 1,2*	**10**
		b)	Discuss the following i. Neural networks ii. Stem cells	*CO4*	*PO 1,2*	**10**

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