U.S.N.										

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

Autonomous Institute Affiliated to VTU

September / October 2024 Supplementary Examinations

Programme: B.E. **Semester: VII**
Branch: ES Cluster (EEE/ECE) **Duration: 3 hrs.**
Course Code: 19ES7BSBFE **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)	Define the term Life. Also discuss its characteristics.	CO1	PO7	**06**
	b)	Explain kingdom classification of living organisms. Give taxonomical ranking for human	CO1	PO7	**06**
	c)	Explain the interaction between living things and environment is called as web of life by using Gaia hypothesis	C02	PO1, PO6	**08**
		UNIT - II			
2	a)	Analyze the different Monosaccharide of Carbohydrates and Monosaccharide's derivatives with any basic structure.	C02	PO1, PO6	**10**
	b)	Why mitosis is called as equational division? Illustrate with diagram different phases of mitosis.	CO1	PO7	**10**
		OR			
3	a)	Sketch the basic chemical structure of a Protein. Define the term Enzyme and thereby analyze the different mechanisms by which enzymes increase reaction rates.	CO1	PO7	**10**
	b)	Sketch and analyze various parts of biological membrane with neat diagram. Also explain the passive membrane transport mechanism	CO2	PO1, PO6	**10**
		UNIT - III			
4	a)	Analyze the generation of X-rays through an X-ray generator with a neat diagram.	CO3	PO6, PO9, PO10	**10**
	b)	Explain how an ionizing radiation is more harmful than non-ionizing radiation. Also Elaborate on types of ionization of radiation	CO3	PO6, PO9, PO10	**10**
		UNIT - IV			
5	a)	Explain the hazards of over usage of cell phones. What is precaution to be taken while using cell phones?	CO3	PO6, PO9, PO10	**07**

		b)	Differentiate between Deterministic effects and Stochastic effects.	*CO3*	*PO6, PO9, PO10*	**06**
		c)	What are the risks involved, if a person gets exposed to low dose of radiation regularly? What happens if the DNA repair mechanism fails, explain its mechanism	*CO3*	*PO6, PO9, PO10*	**07**
			UNIT - V			
	6	a)	Discuss the merits of organic farming. Also brief the advantages and limitations associated with the use of organic fertilizers.	*CO4*	*PO7, PO9, PO10*	**10**
		b)	Explain the effects of phosphorus on plant growth and quality. Also explain the effects of its deficiency. Support your answers with suitable diagrams.	*CO4*	*PO7, PO9, PO10*	**10**
			OR			
	7	a)	Explain the effects of nitrogen on plant growth and quality. Also explain the effects of its deficiency. Support your answers with suitable diagrams.	*CO4*	*PO7, PO9, PO10*	**10**
		b)	Describe the role of potassium involved in enzyme activation and water regulation? Name the symptoms which are caused by the deficiency of it.	*CO4*	*PO7, PO9, PO10*	**10**

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