U.S.N.										

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

Autonomous Institute Affiliated to VTU

January / February 2025 Semester End Main Examinations

Programme: B.E. **Semester: VII**

Branch: ES Cluster (EEE/ET/ECE/EIE/MD) **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 'Taxonomy'. Using the Linnaean system explain how classification is accomplished.	CO2	PO1	**10**
	b)	Analyze the importance of Gaia hypothesis with relevant graph.	CO3	PO3	**10**
		OR			
2	a)	Define the term Life and also discuss its characteristics.	CO3	PO3	**06**
	b)	Analyze the concept of Genetic drift including analysis of the Bottleneck effect.	CO1	-	**07**
	c)	Analyze the following types of evolutions: i. Comparative anatomy ii. Comparative embryology iii. Comparative biochemistry			**07**
		UNIT - II			
3	a)	Analyze the different Monosaccharides of carbohydrates and the Monosaccharide derivatives. Include any basic Monosaccharide structure in your analysis.	CO3	PO3	**10**
	b)	Sketch and analyze its various parts and characteristics of a biological membrane.	CO3	PO2	**10**
		OR			
4	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.	CO3	PO3	**10**
	b)	Sketch, identify its various parts and analyze the Eukaryotic animal cell structure.	CO3	PO3	**10**

			UNIT - III			
	5	a)	Analyze the radiation densities and penetration power of different radiations on human body.	*CO2*	*PO1*	**10**
		b)	With relevant diagram, analyze the braking and characteristic X-rays with appropriate sketches.	*CO1*	-	**10**
			OR			
	6	a)	Define the different types of radiation and the process of stopping the radiations penetrating the human body.	*CO2*	*PO1*	**10**
		b)	With relevant diagram, analyze the generation of X-rays through an X-ray generator.	*CO3*	*PO2*	**10**
			UNIT - IV			
	7	a)	Analyze the role of radiation effects on human DNA.	*CO3*	*PO2*	**12**
		b)	Explain the two different classifications for In-vitro studies of the effects of RF fields.	*CO1*	-	**08**
			OR			
	8	a)	Explain with relevant diagram, the mutation analysis procedure.	*CO1*	-	**08**
		b)	Analyze the following effects of radiation: i. Deterministic effects ii. Stochastic effects	*CO1*	-	**12**
			UNIT - V			
	9	a)	Analyze the importance of Phosphorous in organic farming. Also analyze the effects of Phosphorous on plant growth and quality with relevant diagrams.	*CO2*	*PO1*	**10**
		b)	Analyze the effect of Nitrogen on cell walls with relevant diagrams.	*CO3*	*PO3*	**10**
			OR			
	10	a)	Analyze the effects of Potassium on plant growth and quality with relevant diagrams.	*CO1*	-	**10**
		b)	Analyze with relevant diagrams, symptoms of Nitrogen deficiency in crops.	*CO3*	*PO3*	**10**

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