U.S.N.										

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

Autonomous Institute Affiliated to VTU

May 2024 Semester End Main Examinations

Programme: B.E. **Semester: VIII**

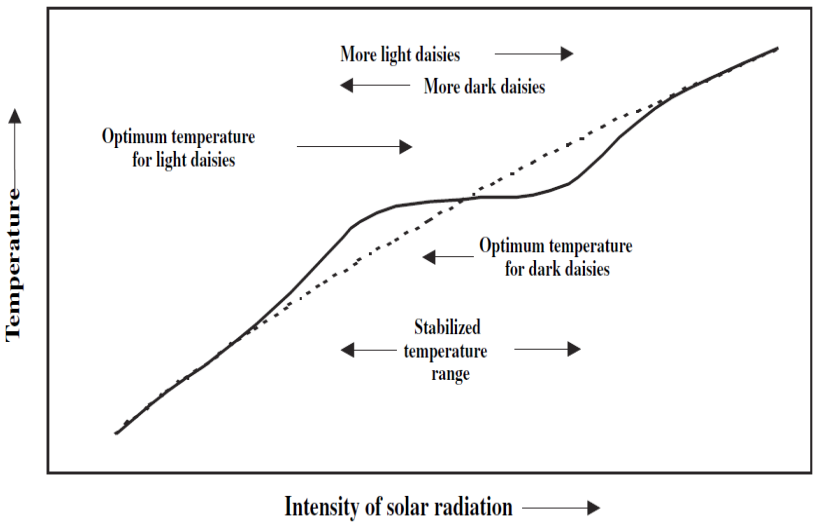
Branch: Artificial Intelligence & Machine Learning **Duration: 3 hrs.**

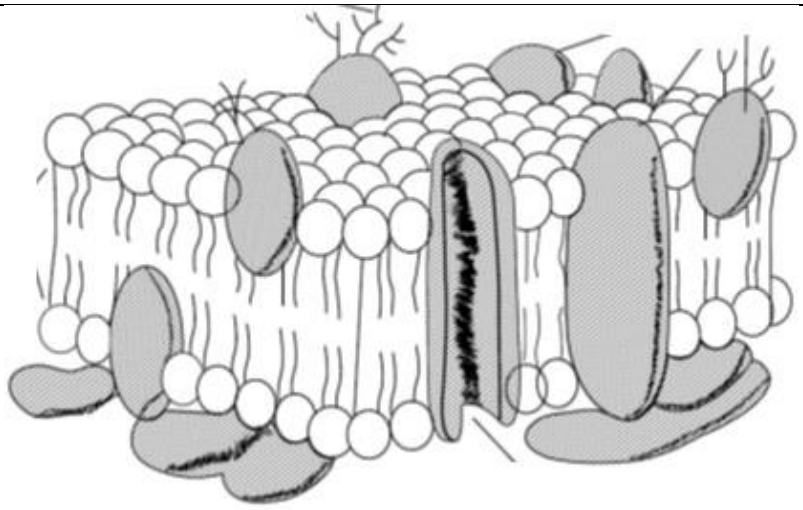
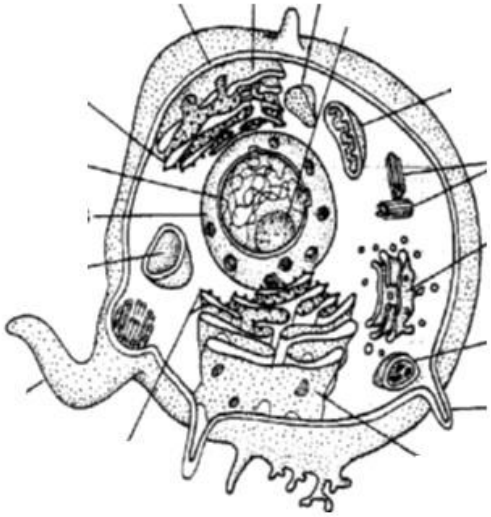
Course Code: 24AM8HSBFE **Max Marks: 100**

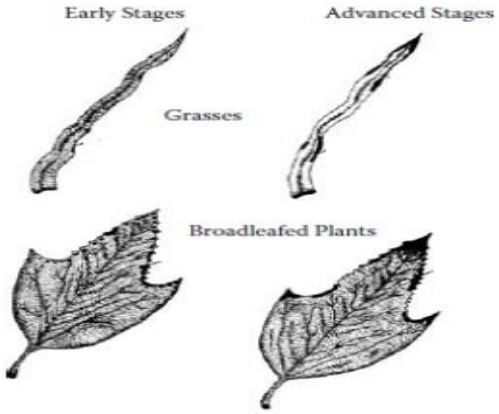
Course: BIOLOGY FOR ENGINEERS

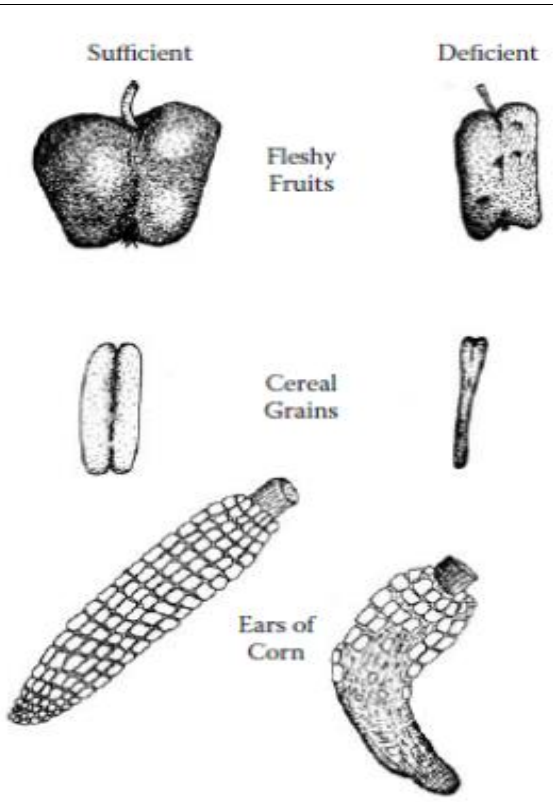
Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

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)	Analyze the following types of evolutions: i. Comparative anatomy ii. Comparative embryology iii. Comparative biochemistry	*CO1*	*PO1*	**6**
	b)	Using the Linnaean system analyze the taxonomy of classification including all details of it.	*CO1*	*PO1*	**7**
	c)	Identify and analyze the hypothesis for the figure 1.  **Figure. 1**	*CO1*	*PO1*	**7**
		UNIT - II			
2	a)	Considering the **Figure.2** given below; sketch and analyze its various parts and characteristics.	*CO2*	*PO1*	**10**

			 **Figure. 2**			
		b)	Identify the process of cell reproduction in Eukaryotes. Complete the process with relevant diagrams and analysis.	*CO2*	*PO1*	**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.	*CO2*	*PO1*	**10**
		b)	Considering the **Figure.3** given below; sketch and analyze its various parts and characteristics.  **Figure. 3**	*CO2*	*PO1*	**10**
			UNIT - III			
	4	a)	Analyze the radiation densities and penetration power of different radiations on human body and also the process of stopping these radiations.	*CO3*	*PO6*	**10**
		b)	With relevant diagram, analyze the generation of X-rays through an X-ray generator. Include the analysis of breaking and characteristic X-rays with appropriate sketches.	*CO3*	*PO6*	**10**

			UNIT - IV			
	5	a)	Analyze the two different forms of radiation effects on the human body with relevant sketches. Comment on the role of radiation effects on human DNA.	*CO3*	*PO6*	**10**
		b)	Classify and explain the different types of radiations. Analyze the two different classifications for In-vitro studies of the effects of RF fields. Also briefly explain the mutation analysis procedure.	*CO3*	*PO6*	**10**
			UNIT - V			
	6	a)	Identify the deficiency of the nutrient and analyze the causes of symptoms for the depicted figure 4.  **Figure. 4**	*CO4*	*PO7*	**10**
		b)	Identify and analyze the causes of deficiency nutrient symptoms for the figure 5.  **Figure. 5**	*CO4*	*PO7*	**10**
			OR			
	7	a)	The following **Figure. 6** depicts two phenomena when a particular nutrient was sufficient and deficient for plants. Identify the nutrient and analyze the causes for this symptom.	*CO4*	*PO7*	**10**

			 **Figure. 6**			
		b)	The following **Figure. 7** depicts shoot growth of a plant under different scenarios of nutrient supplementation. Identify the nutrient and analyze the causes for below mentioned symptoms. 1.Deficiency 2.Optimum Nutrient 3.Lodging  **Figure. 7**	*CO4*	*PO7*	**10**

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