

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2024
Biology for Engineers (CSE)

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. *M*: Marks, *L*: Bloom's level, *C*: Course outcomes.

Module – 1				M	L	C
Q.1	a.	Discuss the various components of Eukaryotic cells.	10	L3	CO1	
	b.	Identify the applications of stem cells.	5	L2	CO1	
	c.	Explain the functions of vitamins.	5	L2	CO1	
OR						
Q.2	a.	Compare Prokaryotic and Eukaryotic cells.	10	L3	CO1	
	b.	Explain the properties of Carbohydrates.	5	L2	CO1	
	c.	Explain the functions of Lipids.	5	L2	CO1	
Module – 2						
Q.3	a.	Highlighting the properties of cellulose, justify cellulose as an effective water filter.	10	L3	CO1	
	b.	Explain the working and development of DNA vaccines by taking suitable example.	10	L2	CO1	
OR						
Q.4	a.	What are Bioplastics? Justify the use of PHA as Bioplastic mentioning its properties and applications.	10	L3	CO1	
	b.	Discuss the following : (i) Meat analogs of protein. (ii) Lipids as cleaning agents.	10	L2	CO1	
Module – 3						
Q.5	a.	What is Electro Encephalogram (EEG)? Discuss the types of Brain activity detected with EEG. Write any three applications.	10	L3	CO2	
	b.	What are Pace Makers? Explain basic design and construction of Pace Makers.	10	L2	CO2	
OR						
Q.6	a.	Justify Lungs as purification system.	10	L3	CO2	
	b.	Explain architecture of Rod and Core cells with suitable diagram.	10	L2	CO2	
Module – 4						
Q.7	a.	What is ultrasonography? Explain the uses and working principle.	10	L2	CO3	
	b.	What is lotus leaf effect? Explain the mechanism and applications of super Hydrophobic effect.	10	L2	CO3	
OR						
Q.8	a.	The structure and design of Kingfisher beak lead to the design of Bullet trains. Explain.	10	L2	CO3	
	b.	Explain the working and applications of Bionic Leaf Technology.	10	L2	CO3	

Module – 5					
Q.9	a.	Explain the use of Electrical tongue in food science.	10	L2	CO4
	b.	Explain the advantages and limitations of Artificial Intelligence for disease diagnosis.	10	L2	CO4
OR					
Q.10	a.	Explain Bioengineering solutions for muscular dystrophy and Osteoporosis.	10	L2	CO4
	b.	Explain most commonly used Bioprinting Techniques.	10	L2	CO4

* * * * *