

CBCS SCHEME

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BBOC407

Fourth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026 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.	Define Cell. List the essential characteristics of cells.	08	L1	CO1
	b.	Define Stem Cells. List and explain the different types of stem cells.	08	L1	CO1
	c.	Write a short notes on Bio-Molecules.	04	L2	CO1
OR					
Q.2	a.	What are Carbohydrates? Briefly explain the Monosaccharides with glucose structure.	08	L2	CO1
	b.	What are Lipids? List the engineering applications of Lipids.	08	L2	CO1
	c.	List the properties of Enzymes for engineering applications.	04	L2	CO1
Module – 2					
Q.3	a.	Explain the properties of Cellulose-based water filter.	08	L2	CO1
	b.	List the engineering applications of PHA bioplastic.	06	L2	CO1
	c.	Write a note on DNA vaccine.	06	L1	CO1
OR					
Q.4	a.	With diagram explain the Bio-diesel production path.	10	L2	CO1
	b.	What are Bio-sensors? With diagram explain the working principle of different bio-sensors.	10	L2	CO1
Module – 3					
Q.5	a.	Explain brain as a computer system.	10	L2	CO2
	b.	Explain eye as a camera system.	10	L2	CO2
OR					
Q.6	a.	Illustrate the architecture of Lungs as a purification system.	10	L2	CO2
	b.	Describe the mechanism of filtration in human kidney.	10	L2	CO2
Module – 4					
Q.7	a.	With diagram elucidate the working principle of ultrasonography.	08	L2	CO3
	b.	List the uses of sonars.	08	L2	CO3
	c.	Write a note on Bionic Leaf.	04	L1	CO3
OR					
Q.8	a.	Explain the science behind the birds fly using its wings and holding their body weight in air.	10	L1	CO3
	b.	List the advantages of hemoglobin based oxygen carriers.	05	L2	CO3
	c.	List the advantages of PFC's.	05	L2	CO3
Module – 5					
Q.9	a.	Write Bio-engineering solutions for Muscular Dystrophy.	08	L2	CO4
	b.	Write schematic representation of bio-printing process.	08	L2	CO4
	c.	Compare 3D printers and bio-printers	04	L1	CO4
OR					
Q.10	a.	List and explain commonly used Bio-printing techniques.	08	L2	CO4
	b.	What are the technological importance of Bio-computing?	08	L2	CO4
	c.	Write a short note on Self Healing Bio-concrete.	04	L2	CO4

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