

CBCS SCHEME

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BBOC407

Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025 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. Explain function and structure of cell.	7	L2	CO1
	b.	List the various hormones and write the functions of them.	7	L2	CO1
	c.	Demonstrate the properties and function of lipids.	6	L3	CO1
OR					
Q.2	a.	What are stem cells? Discuss the function of stem cells.	7	L2	CO1
	b.	List the vitamins and write the functions of them.	7	L2	CO1
	c.	Demonstrate the properties and function of nucleic acids.	6	L3	CO1
Module – 2					
Q.3	a.	Define Biomolecule. List the classification of biomolecules with each one example in short in engineering application.	7	L2	CO2
	b.	Explain the applications of enzymes in biosensors and bio bleaching.	7	L2	CO2
	c.	What is DNA finger printing? Explain the process involved in DNA finger printing.	6	L3	CO2
OR					
Q.4	a.	Explain the properties of cellulose as an effective water filter.	7	L2	CO2
	b.	List the properties of PHA and explain the engineering applications of PHA.	7	L2	CO2
	c.	Demonstrate whey as a protein.	6	L3	CO2
Module – 3					
Q.5	a.	Define ECG. Explain in detail.	7	L2	CO3
	b.	How kidney will be used as a filtration system, explain with one type of dialysis example.	7	L2	CO3
	c.	Illustrate Brain as a CPU system.	6	L3	CO3

OR

Q.6	a.	Briefly discuss the various bio engineering solutions for muscular dystrophy.	7	L2	CO3
	b.	Explain robotic arms for Prosthetic device.	7	L2	CO3
	c.	Illustrate eye as a camera system.	6	L3	CO3

Module – 4

Q.7	a.	Compare the process of photo synthesis to the functioning of photo synthesis to the functioning of photovoltaic cells.	7	L2	CO4
	b.	Super hydrophobic and self cleaning surfaces. Explain in detail.	7	L2	CO4
	c.	Write a note on Lotus leaf effect.	6	L3	CO4

OR

Q.8	a.	Compare HBOC's and PEC.	7	L2	CO4
	b.	How shark skin and swim suits are using biological concepts.	7	L2	CO4
	c.	Write a note on GPS technology.	6	L3	CO4

Module – 5

Q.9	a.	Explain in detail flow AI will be used in all disease diagnosis.	7	L2	CO5
	b.	Demonstrate bioremediation and biomining.	7	L3	CO5
	c.	Explain muscular system as a scaffold.	6	L2	CO5

OR

Q.10	a.	Explain in detail electrical nose in food science.	7	L2	CO5
	b.	Demonstrate bioprinting technique list all of them.	7	L3	CO5
	c.	Explain DNA origami and Bio computing.	6	L2	CO5
