CBCS SCHEME

USN | 2 | 5 | P | 2 | 3 | C | I | 0 | 3 | 2 | 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.

			M	L	C
		Module – 1			
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 nuclic 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 filteration 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**

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