

# CBCS SCHEME - Make-Up Exam

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BBOK407

## Fourth Semester B.E./B.Tech. Degree Examination, June/July 2025 Biology for Engineers

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.	Explain the structure and function of plant cell.	10	L4	CO1
	b.	Discuss briefly about the properties and functions of nucleic acid.	10	L2	CO1
<b>OR</b>					
Q.2	a.	Discuss the classification and application of stem cells in brief.	10	L2	CO1
	b.	Apply the knowledge of lipid molecules use for the production of bio-diesel.	10	L3	CO1
<b>Module – 2</b>					
Q.3	a.	What is bio-bleaching? Explain the role of lignolytic enzymes in bio-bleaching.	10	L2	CO2
	b.	How DNA finger printing technology is applied in forensic applications? Discuss in detail.	10	L3	CO1
<b>OR</b>					
Q.4	a.	Outline the use of whey protein and meat analogues as food supplement. Mention their advantages.	10	L3	CO2
	b.	Illustrate the properties and applications of PHA.	10	L2	CO1
<b>Module – 3</b>					
Q.5	a.	Explain lugs as purification system.	10	L4	CO2
	b.	Describe the following: i) Electro Encephalogram (EEG) ii) Chronic Kidney Disease (CKD)	10	L2	CO2
<b>OR</b>					
Q.6	a.	Illustrate heart as a double pump.	10	L3	CO2
	b.	Write a note on: i) Pacemakers ii) Spirometry	10	L2	CO2

**Module – 4**

<b>Q.7</b>	<b>a.</b>	Distinguish between biological and technological echolocation. Deliberate its significance in navigation.	<b>10</b>	<b>L4</b>	<b>CO3</b>
	<b>b.</b>	Explain the following : i) Lotus leaf effect ii) Photovoltaic cells	<b>10</b>	<b>L2</b>	<b>CO3</b>

**OR**

<b>Q.8</b>	<b>a.</b>	Discuss about engineering application of Velcro technology bio inspired by plant burrs.	<b>10</b>	<b>L2</b>	<b>CO3</b>
	<b>b.</b>	Illustrate the HBOCs and PFCs as human blood substitutes.	<b>10</b>	<b>L3</b>	<b>CO3</b>

**Module – 5**

<b>Q.9</b>	<b>a.</b>	Outline the process and materials involved in bio printing.	<b>10</b>	<b>L2</b>	<b>CO4</b>
	<b>b.</b>	Narrate the process of bio mining through microbial surface adsorption.	<b>10</b>	<b>L3</b>	<b>CO4</b>

**OR**

<b>Q.10</b>	<b>a.</b>	What are self-healing bio-concrete? Explain the process of self healing mechanism in bio-concrete. Mention its advantages.	<b>10</b>	<b>L2</b>	<b>CO4</b>
	<b>b.</b>	Write a note on : i) Bio-imaging ii) Artificial intelligence for disease diagnosis	<b>10</b>	<b>L1</b>	<b>CO4</b>

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