

## Model Question Paper-1/2 with effect from 2022-23 (CBCS Scheme)

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**Fourth Semester B.E. Degree Examination**  
**Subject Title :Biology for Engineers**

**TIME: 03 Hours****Max. Marks: 100**Note: Answer any **FIVE** full questions, choosing at least **ONE** question from each **MODULE**.

Module -1			*Bloom's Taxonomy Level	Mark s
Q.01	a	Explain the structure and functions of cell with neat labelled diagram.	L4	10
	b	Mention the differences between plant cell and animal cells.	L2	10
<b>OR</b>				
Q.02	a	What are stem cells? Explain the classification and application of stem cells	L4	10
	b	Explain in detail the properties and applications of Nucleic acids	L4	
<b>Module-2</b>				
Q. 03	a	What are the key properties, advantages and limitations of cellulose - based water filter	L2	10
	b	Describe the use of 1.Whey protein 2. Meat analogues and 3. Plant based proteins as food with examples.	L2	10
<b>OR</b>				
Q.04	a	With an example explain the development of vaccines for the treatment of rabies	L4	10
	b	Illustrates the properties and applications of PHA	L2	10
<b>Module-3</b>				
Q. 05	a	With neat diagram explain the working principle of Heart - Lung machine.	L2	10
	b	Explain in detail Brain as a CPU	L4	10
<b>OR</b>				
Q. 06	a	What is ECG? Describe Various part of the ECG.	L2	10
	b	What are Pacemakers? Briefly Explain various kinds of Pacemakers.	L4	10
<b>Module-4</b>				
Q. 07	a	Explain the following. 1. Bionic leaf 2. Photovoltaic cells.	L2	10
	b	Write a note on Bioremediation and Biomining via microbial surface adsorption.	L1	10
<b>OR</b>				
Q. 08	a	What Echolocation? Explain Ultrasonography and Sonars	L2	10
	b	Write a note on Hemoglobin- based oxygen carriers (HBOCs).and per flourocarbons (PFCs)	L2	10
<b>Module-5</b>				
Q. 09	a	Explain the mechanism and bioengineering solutions for muscular dystrophy and osteoporosis.	L4	10
	b	Explain the role of Bio-imaging. And AI in disease diagnosis	L3	10
<b>OR</b>				
Q. 10	a	Write a note i.Self healing bio concrete ii. Bioremediation.	L2	10

	<b>b</b>	Write a note on bio printing techniques and materials	L1	10
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