

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

BE/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Fifth Semester

Biomedical Engineering

CBM332 - Artificial Organs and Implants

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	Define artificial organ with example.	RE	1	2
2.	What is meant by Immunosuppressant?	RE	1	2
3.	Draw the paradigm for implant design.	RE	2	2
4.	Which one are regenerative and non-regenerative tissues in skin?	RE	2	2
5.	Distinguish natural and synthetic polymers.	AN	3	2
6.	List the types of wear for implants.	AN	3	2
7.	What is mechanical ventilation?	RE	4	2
8.	Name the three types of oxygenators with diagram.	RE	4	2
9.	List some application for craniofacial replacement.	AN	5	2
10.	State some advancement in diagnostic imaging equipment.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Analyze the various concepts considered in the design of a fully functional artificial organ and its evaluation process.	AN	1	13
	Or			
	b Compare the transplantation of kidney and lungs include the donor, procedure and other complications concepts in your discussion.	AN	1	13
12.	a i Categories the various implant design criteria effects of the body on the implant.	AN	2	7
	ii Describe various missing organs and its replacement.	UN	2	6
	Or			
	b Examine about the tissue engineering and its components with neat diagram.	AN	2	13

13.	a	i	Summarize in detail about Biocompatibility and its uses in the medical field.	UN	3	7
		ii	Compare local and systematic effects of implants.	UN	3	6
Or						
	b		Illustrate in detail about various mechanisms involved in bone implantation.	UN	3	13
14.	a		Describe various prosthetic cardiac valves with neat diagram.	UN	4	13
Or						
	b		Explain how Cardiac pacemaker is manufactured with neat diagram.	UN	4	13
15.	a		Describe in detail about the significance of the process of maxillofacial replacement with neat diagram.	UN	5	13
Or						
	b		Outline the various phase soft tissue repair and replacement process in the medical field.	UN	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>	<i>Questions</i>			<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a		Develop a heart lung machine model and its application in the medical field.	EV	4	15
Or						
	b		Discuss the various procedure involved in the implantation of Artificial kidney and dialysis membrane with necessary diagram.	EV	4	15