

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL/MAY 2026***Sixth Semester**Biomedical Engineering***CBM333 – Assistive Technology***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.	What is the principle of external pulsation techniques?	L1	1	2
2.	Name any two types of cardiac assist devices.	L1	1	2
3.	What is the main idea of hemodialyser unit?	L2	2	2
4.	Define membrane dialysis.	L1	2	2
5.	What is an audiogram?	L1	3	2
6.	Classify the drawbacks of conventional hearing aids.	L2	3	2
7.	Define prosthetic and orthotic device.	L1	4	2
8.	How would you classify the functional electrical stimulation?	L2	4	2
9.	Can you explain what a Transcutaneous Electrical Nerve Stimulator (TENS) is?	L2	5	2
10.	Define biofeedback therapy.	L1	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Explain the structure, working and physiological impact of an Intra-Aortic Balloon Pump (IABP).	L2	1	16
	Or			
	b Explain different types of prosthetic heart valves with their construction, function, and applications.	L2	1	16
12.	a i Explain the construction and working of an artificial kidney.	L2	2	8
	ii With the neat sketch, explain the construction and working principle of dialysis.	L2	2	8
	Or			
	b i Explain the construction and types of dialysis membranes used in hemodialysers.	L2	2	8
	ii Explain the design and advantages of portable dialysis systems.	L2	2	8
13.	a With neat diagrams, explain air conduction and bone conduction hearing tests.	L1	3	16
	Or			
	b Explain the design and signal flow of a DSP-based hearing aid with a neat block diagram.	L2	3	16

14.	a	Explain the various types of hand and arm prostheses with their design and function.	L2	4	16
		Or			
	b	Explain the Functional Electrical Stimulation (FES) - its principle, working, and applications.	L2	4	16
15.	a	Develop the construction and working of a TENS unit with a neat diagram.	L3	5	16
		Or			
	b	Examine the biofeedback and explain its types and applications in medical therapy.	L3	5	16