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Question Paper Code:RB406

B.E./B.Tech. DEGREE EXAMINATION, NOV 2025

Professional Elective

21BMV406 - ASSISTIVE AND AUGMENTATIVE TECHNOLOGY

Biomedical Engineering

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Differentiate between mechanical valve and Bioprosthetic valve.	CO1- U
2.	Define Balloon Catheter Placement.	CO1- U
3.	Explain Osmosis process in detail	CO1- U
4.	Which patient need dialysis process in frequent times.	CO1- U
5.	Define Pure tone audiogram	CO1- U
6.	List out the drawbacks of Hearing aids.	CO1- U
7.	List out the challenges of Prosthetic devices.	CO1- U
8.	Define Feedback in Orthotic systems.	CO1- U
9.	What are the application of AR.	CO1- U
10.	Define Virtual Reality(VR).	CO1- U

PART – B (5 x 16= 80 Marks)

11.	(a)	Explain Prosthetic Heart valves in detail with its complications.	CO1 -U	(16)
		Or		
	(b)	Demonstrate understanding of the mechanism of action of the IABP and how it benefits patients with cardiac issues.	CO1 - U	(16)
12.	(a)	Explain the role of portable dialyzer monitoring in patient care, demonstrating understanding of its function and benefits.	CO1- U	(16)
		Or		
	(b)	Describe how a hemodialyzer filters blood during the hemodialysis process.	CO1 -U	(16)

13.	(a)	How would you explain the significance of an audiogram and the results to a patient who is unfamiliar with hearing tests?	CO3- Ana	(16)
		Or		
	(b)	What are the key components of the masking technique, and how do they interact with each other?	CO3- Ana	(16)
14.	(a)	Demonstrate the types of Externally Powered Limb Protheses, its key features, benefits and challenges.	CO1-U	(16)
		Or		
	(b)	Explain about sensory orthotic assist device in detail with its challenges and benefits.	CO1-U	(16)
15.	(a)	Discuss about the technology and features of Augmented Reality(AR).	CO1-U	(16)
		Or		
	(b)	Explain briefly the evaluation of an AR system.	CO1-U	(16)