Exam Date & Time: 12-Jul-2023 (02:30 PM - 05:30 PM)

MANIPAL ACADEMY OF HIGHER EDUCATION

SIXTH SEMESTER B.TECH MAKE UP EXAMINATIONS, JULY - 2023
REHABILITATION ENGINEERING [BME 4303]

Marks: 50   **Duration: 180 mins.**

A

Answer all the questions.

Instructions to Candidates: Answer ALL questions Missing data may be suitably assumed

1)		Explain the various rehabilitation process for physical disability	
	A)		(3)
	B)	Classify and explain the popular rehabilitation practices	(3)
	C)	Explain the basic structure of a neuron and its working	(4)
2)		Stress the utility and functional significance of sodium potassium pump?	
	A)		(3)
	B)	State the importance and utility of models in the development of assistive devices	(3)
	C)	State the important characteristics of EMG signals	(4)
3)		What is an MMG signal? Explain the characteristics of the same.	
	A)		(4)
	B)	What are the different types of modeling tools? Briefly explain each of them.	(3)
	C)	Illustrate the mechanism of controlling the dynamics of muscle movement.	(3)
4)		Illustrate the structure of action potential wave initiated by a stimulus.	
	A)		(4)
	B)	State the important steps to be followed for developing assistive devices	(3)

C)   Formulate an algorithm for processing EMG signal for assistive device design purpose.

(3)

5)   Illustrate the roll of mathematical models in physical rehabilitation process.

(5)

A)

B)   What is a verbal model? Where and how it is used?

(3)

C)   What are physical models? Explain with examples?

(2)

-----End-----