

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VI (NEW) EXAMINATION – WINTER 2020****Subject Code: 2160310****Date:01/02/2021****Subject Name: Rehabilitation Engineering****Time: 02:00 PM TO 04:00 PM****Total Marks: 56****Instructions:**

1. Attempt any FOUR questions out of EIGHT questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		MARKS
Q.1	(a) Write characteristics of good Prosthesis.	03
	(b) Explain design of Hearing Aids.	04
	(c) Explain principles of Universal Design in detail. Also Write steps of Universal Design process with one example.	07
Q.2	(a) Explain working Principle of CCTV.	03
	(b) Write short note on Path Sounder.	04
	(c) Explain engineering concept in Sensory and Motor rehabilitation.	07
Q.3	(a) Define: Rehabilitation engineering, Amputation, Sensory Augmentation.	03
	(b) Write a short note on Tactile devices for visually challenged person.	04
	(c) Briefly describe design of Upper limb and Lower limb Orthosis.	07
Q.4	(a) Explain PHAATE model.	03
	(b) Explain Cochlear implant.	04
	(c) Explain design concept of various Prosthesis for lower limb.	07
Q.5	(a) Explain laser cane with its limitations and applications.	03
	(b) Explain Standards for Assistive technology.	04
	(c) Explain Design aspects of Upper Limb prosthesis.	07
Q.6	(a) Explain anatomy of lower limb.	03
	(b) Explain about Optacon in detail.	04
	(c) Explain the ergonomic considerations in design of wheelchair.	07
Q.7	(a) Explain Tadoma method.	03
	(b) Explain Braille technique for visually impaired person.	04
	(c) Explain design concept of Muscle and Nerve simulator.	07
Q.8	(a) What is the role of Rehabilitation in Sports?	03
	(b) Explain Ultrasonic Cane in detail.	04
	(c) Explain FES system with necessary schematics.	07
