

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII(OLD) • EXAMINATION – WINTER 2017

Subject Code: 180301**Date: 02-11-2017****Subject Name: Rehabilitation Engineering****Time: 02:30 pm to 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain following terms with example. **07**
- Residual Capacity
 - Orthosis
 - Disability
- (b) Write a descriptive note on Rehabilitation engineers attempt to restore the functions of basic human senses. **07**
- Q.2** (a) Explain engineering concept in motor rehabilitation. **07**
- (b) Explain control mechanism of intelligent prosthetic knee during swing and stance phase. **07**
- OR**
- (b) Describe, how FES can restore muscular movements in human with paralyzed? **07**
- Q.3** (a) Explain concept of hybrid assistive system. **07**
- (b) Explain control strategy of myoelectric hand and arm prostheses. **07**
- OR**
- Q.3** (a) Discuss the factors that affect design of wheelchair. **07**
- (b) Draw and explain various canes design used for visually impaired person. **07**
- Q.4** (a) Explain following electronic travel applications **07**
- Path sounder
 - Ultrasonic Touch
- (b) Explain tactual vision substitution concepts. **07**
- OR**
- Q.4** (a) Explain visual & tactual auditory substitution concepts. **07**
- (b) Explain disability measurement objectives and approaches. **07**
- Q.5** (a) Explain available rehabilitation aids/technology for mentally impaired person. **07**
- (b) Explain available stair climb aids used for disable. **07**
- OR**
- Q.5** (a) Explain available walking & postural aids **07**
- (b) Explain design aspects of various wheelchair for sports related applications used for disable person. **07**
