

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VIII EXAMINATION – WINTER 2015

Subject Code:180301**Date:04/12/2015****Subject Name: Rehabilitation Engineering****Time: 2:30pm to 5:00pm****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) Define Augmentation. Explain different augmentation and substitution techniques used for Visually Impaired person. **07**
 (b) Explain Restoration of Hand functions with appropriate examples. **07**
- Q.2** (a) Define Rehabilitation. Explain need of Physical, Psychological, Physio-psychological rehabilitation with proper examples. **07**
 (b) Discuss important design parameters of orthotic & prosthetic. **07**
- OR**
- (b) Differentiate between orthotic and orthosis & explain Intelligent prosthetic knee with necessary diagram. **07**
- Q.3** (a) Explain manually powered wheel chair with common frame designing. **07**
 (b) Enlist different types of Mobility AIDs & explain LASER cane. **07**
- OR**
- Q.3** (a) Explain external powered wheel chair with its basic electrical system. **07**
 (b) Write a Short note on:
 1. Mowat Sonar sensor as a Travel Aid
 2. Nottingham Obstacle Detector. **07**
- Q.4** (a) Describe various Visual Auditory Substitution Techniques. **07**
 (b) What is ADL? Explain Self Aligning Orthotic Knee Joint **07**
- OR**
- Q.4** (a) Describe various Tactual Auditory Substitution Techniques. **07**
 (b) Discuss ergonomics of Wheelchair propulsion in detail. **07**
- Q.5** (a) Explain scope of measurement in Rehabilitation. **07**
 (b) Enlist and Explain different Impairments and Related Assistive Technologies developed for Disable. **07**
- OR**
- Q.5** (a) Explain different measurement Objectives and approaches. **07**
 (b) Explain Conceptual framework of Technology and disability. **07**
