

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-VIII Examination May 2012****Subject code: 180301****Subject Name: Rehabilitation Engineering****Date: 10/05/2012****Time: 10.30 am – 01.00 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 engineering concept in sensory & motor rehabilitation. **07**
 (b) Explain the following terms: **07**
 1) Rehabilitation engineering 2) Orthosis 3) Prosthesis
 4) Residual capacity 5) Handicap 6) Assistive technology
 7) Social limitation
- Q.2** (a) Explain an intelligent prosthetic knee. **07**
 (b) Give the classification of wheelchair. Explain the ergonomic considerations in design of wheelchair. **07**
- OR**
- (b) Explain the material used in wheelchair designing. Also give overview of frame design. **07**
- Q.3** (a) Write a note on hybrid assistive system (HAS). **07**
 (b) Explain myoelectric hand & arm prosthesis. **07**
- OR**
- Q.3** (a) Explain power wheelchair. **07**
 (b) Explain restoration of standing & walking. **07**
- Q.4** (a) Explain standard cane & Laser cane with their features & limitations. **07**
 (b) What is Augmentation? Explain different visual augmentative devices. **07**
- OR**
- Q.4** (a) Explain subjective & objective measurement methods in rehabilitation. **07**
 (b) Explain Auditory augmentation with assistive devices. **07**
- Q.5** (a) Explain OCR & Automatic reading machine in detail. **07**
 (b) Explain Tadoma method & Tactile vocoders. **07**
- OR**
- Q.5** (a) Write a note on tactual Auditory substitution. **07**
 (b) Write a short note on following: **03**
 1) Mowet sensor **03**
 2) Ultrasonic binaural sensing device **04**
