

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. - SEMESTER – VIII EXAMINATION – OCTOBER 2012****Subject code: 180301****Date: 27/10/2012****Subject Name: Rehabilitation Engineering****Time: 02.30pm - 05.00pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) Explain intelligent prosthetic knee. **07**
(b) Explain hybrid assistive system (HAS). **07**
- Q.2** (a) Give the classification of visual impairment and explain devices for visual augmentation. **07**
(b) Explain engineering concepts in sensory rehabilitation. **07**
OR
(b) Write a short note on intelligent prosthetic hand. **07**
- Q.3** (a) Give the detail classification of wheelchair. **07**
(b) (i) Write a short note on ultrasonic torch. **04**
(ii) Write a short note on path sounder. **03**
OR
- Q.3** (a) Explain subjective and objective measurement methods in rehabilitation engineering. **07**
(b) Explain FES system with its application. **07**
- Q.4** (a) Explain auditory substitution devices in detail. **07**
(b) Explain LASER cane and give its advantages over standard cane. **07**
OR
- Q.4** (a) Explain engineering concept in motor rehabilitation. **07**
(b) Explain powered wheel chair in detail. **07**
- Q.5** (a) Explain tactual vision substitution with various techniques. **07**
(b) Explain restoration of standing and walking. **07**
OR
- Q.5** (a) What is rehabilitation engineering? Enlist and explain types of physical impairment. **07**
(b) Enlist and explain ergonomic consideration in designing wheel chair. **07**
