Seat No.: Enrolment No.	
-------------------------	--

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## **BE - SEMESTER-VIII • EXAMINATION - SUMMER 2014**

Sub	ject	Code: 180301 Date: 05-06-201	14
Tim	e: 10	Name: Rehabilitation Engineering 0:30 am TO 01:00 pm Total Marks:	<b>70</b>
Instr	1. 2. 3.		
Q.1	(a)	Define following terms: (any seven)  i. Rehabilitation v. Prosthesis  ii. Rehabilitation engineering vi. Disability  iii. Rehabilitation technology vii. Impairment  iv. Orthosis viii. handicap	07
	<b>(b)</b>	Explain the concepts of engineering in sensory and motor rehabilitation.	07
Q.2	(a)	Explain three cardinal considerations for designing of orthopedic orthosis and prosthesis.	07
	<b>(b)</b>	Give the classification of wheelchair and also explain the ergonomic considerations for wheelchair designing.  OR	07
	<b>(b)</b>	Write a note on: intelligent prosthetic knee.	07
Q.3	(a)	Write short notes on: a) FES system b) HAS	14
		OR	
Q.3	(a)	Explain the material used in wheelchair designing. Also give overview of frame design.	07
	<b>(b)</b>	Draw and explain LASER cane. How it overcomes the limitations of conventional cane.	07
<b>Q.4</b>	(a)	Explain myoelectric hand and arm prosthesis.	07
	<b>(b)</b>	Draw and explain the working of OPTACON.	07
Q.4	(a)	OR Explain the structure of hearing aids with block diagram.	07
Q,1	(b)	Write a note on: cochlear implant	07
Q.5	(a)	Explain wheels and casters in wheelchairs. Also explain following terms: <ul> <li>a) Caster flutter</li> <li>b) Caster float</li> <li>c) Tracking</li> <li>d) Alignment</li> </ul>	07
	<b>(b)</b>	Explain types of wheelchair frames with advantages and disadvantages.  OR	07
Q.5	(a)	Explain the restoration of standing and walking.	<b>07</b>
	<b>(b)</b>	Which are the components of power wheelchair electrical system.	<b>07</b>

\*\*\*\*\*\*