

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2723108

Date: 27/05/2016

Subject Name: Artificial Organs & Rehabilitation Engineering

Time: 10:30 am to 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)** Define Rehabilitation Engineering. Also explain different Biomaterials used in artificial organs and prostheses. **07**
- (b)** Explain Rheological properties of blood and also explain problems associated with extracorporeal blood flow. **07**
- Q.2 (a)** Explain separation of antigens from blood in ESRD patients in detail. **07**
- (b)** Write a short note on Hemodialysers. **07**
- OR**
- (b)** Write a short note on artificial kidney. **07**
- Q.3 (a)** Explain different artificial heart-lung devices. **07**
- (b)** Write a short note on artificial pancreas. **07**
- OR**
- Q.3 (a)** What is Audiogram? Explain audiometry in detail. **07**
- (b)** Explain different types of digital hearing aids in detail. **07**
- Q.4 (a)** Explain principle and operation of I.A.B.P machine. **07**
- (b)** Write short notes on: Ophthalmoscope and Retinoscope. **07**
- OR**
- Q.4 (a)** What is Disability? Explain Engineering concepts in sensory Rehabilitation. **07**
- (b)** Enlist and Explain different Impairments and Related Assistive Technologies developed for Disable. **07**
- Q.5 (a)** Explain Engineering concepts in motor Rehabilitation **07**
- (b)** Define Rectification for artificial limb design. & explain Controlled Prosthetic Hand. **07**
- OR**
- Q.5 (a)** Explain Visual Auditory substitution techniques in detail. **07**
- (b)** Define orthotics and also explain Externally powered and controlled orthotics. **07**
