

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 2016

Subject Code:2160303

Date:11/05/2016

Subject Name: Therapeutic Techniques & Instrumentation

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) Explain role of telemetry in medical field. **07**
(b) Explain working principle of microwave diathermy machine. **07**
- Q.2** (a) Explain the specifications and circuit diagram of DC defibrillator. **07**
(b) Define electrosurgical apparatus. Explain different modes of operation with appropriate diagrams. **07**
- OR**
- (b) Explain working of heart lung machine with necessary diagrams. **07**
- Q.3** (a) What is apnea? Explain apnea detection technique. **07**
(b) Discuss the safety aspects in electro-surgical units. **07**
- OR**
- Q.3** (a) Explain construction and working coil type and hollow fiber types of hemodialyser. **07**
(b) Explain Gas supply system of Anesthesia machine **07**
- Q.4** (a) How to measure the energy content of Defibrillator discharge pulse? **07**
(b) Discuss principle, working and applications of ultrasonic therapy unit. **07**
- OR**
- Q.4** (a) Give brief information about spinal cord stimulation and cerebral stimulation. **07**
(b) Explain schematic diagram of anesthesia machine and patient breathing circuit. **07**
- Q.5** (a) Explain working of Blood leak detector in dialysers. **07**
(b) Explain working of CO₂ laser with Block diagram. **07**
- OR**
- Q.5** (a) Explain principle of operation, properties, gain medium and pumping mechanism of LASER. **07**
(b) Explain working of Helium-Neon laser with schematic diagram. **07**
