Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-VI • EXAMINATION – WINTER 2013

Subject Code: 160303 Date: 02-12-2013

Subject Name: Therapeutic Instrumentation	Subject Name	: Therapeutic	Instrumentation
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Time: 02:30 pm to 05:00 pm Total Marks: 70

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Instruction	ne.

- 1. Attempt all questions.
- 2. Make suitable assumptions wherever necessary.
- 3. Figures to the right indicate full marks.
- Q.1 (a) Explain safety aspects of Electro-surgical units.
 (b) Explain all electro-surgical techniques. Draw the different waveforms generated by the surgical diathermy machines.
- Q.2 (a) Explain Implantable defibrillator system components. 07
 - (b) What is fibrillation? Explain working of Defibrillator with necessary circuit. 07

OR

- (b) How to measure the energy content of Defibrillator discharge pulse? 07
- Q.3 (a) Explain all terms that define the performance of Dialyzers. 07
 - (b) What is Apnea? Explain method of measurements. 07

OR

- Q.3 (a) Explain working of portable kidney machine using flow diagram. 07
 - (b) Enlist the designs of Dialyzers. Explain construction of any two. 07
- Q.4 (a) What is the meaning of LASER coherence? Explain principle of operation, properties, gain medium and pumping mechanism of LASER.
 - (b) Explain working of Helium-Neon laser with schematic diagram. 07

OR

- Q.4 (a) Explain working of Co₂ laser with Block diagram.
 - (b) Explain physiological heat production and loss methods. 07
- **Q.5** (a) Explain circuit diagram of short-wave diathermy unit with application **07** technique of short-wave diathermy.
 - (b) Explain vapour Delivery system of Anesthesia machine. 07

OR

- Q.5 (a) Explain applications of electrical stimulation for pain relief. 07
 - (b) Draw complete schematic of anesthesia machine. Give the importance of different valves.
