Seat No.:	Enrolment No.

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

	· ·	BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017 Code: 160303 Date: 27/04/20	<b>17</b>
Tir	ne: 1 cructio 1. 2.	Name: Therapeutic Instrumentation 0:30 AM to 01:00 PM Total Marks: ons: Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks.	70
Q.1	(a) (b)	Explain the architecture and working of implantable defibrillator system. What is fibrillation? What is the need for a defibrillator? Explain defibrillator analyzers.	07 07
Q.2	(a) (b)	Define electrosurgical apparatus. Explain different modes of operation with appropriate schematics.  Draw schematic and explain working of parallel flow dialyzer and hollow fibre haemodialyzer.	07 07
		OR	
	<b>(b)</b>	What is the difference between angiography and angioplasty? Explain process of coronary and balloon angiography.	07
Q.3	(a) (b)	Explain construction and working of surgical diathermy machine with diagram.  Explain principle and operation of microwave diathermy machine.  OR	07 07
Q.3	(a) (b)	Discuss the safety aspects in electro-surgical units. What is Apnea? Explain method of measurements.	07 07
Q.4	(a) (b)	Explain schematic diagram of anesthesia machine and patient breathing circuit.  Discuss the application of LASER for retinal detachment.  OR	07 07
Q.4	(a)	Define LASER coherence? Explain principle of operation, properties, gain medium and pumping mechanism of LASER.	07
	<b>(b)</b>	Explain physiological heat production and loss mechanism.	<b>07</b>
Q.5	(a) (b)	Explain applications of electrical stimulation for pain relief.  Explain the principle and method used for phototherapy devices for incubator.  OR	07 07
Q.5	(a)	Give Illustration of way that a Heart-lung machine is connected to the heart. Also give brief note on components of Heart-lung machine.	07
	<b>(b)</b>	Discuss principle, working and applications of ultrasonic therapy unit.	07

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