Seat No.:	Enrolment No.
Seat 110	Emonitent No

Subject Code: 160303

GUJARAT TECHNOLOGICAL UNIVERSITY

 $BE-SEMESTER-VI\ (OLD). EXAMINATION-WINTER\ 2016$

Date: 22/10/2016

	Subje	ct Name: Therapeutic Instrumentation	
,	Time:	10:30 AM to 01:00 PM Total Marks: 70	
]	Instruc	 Attempt all questions. Make suitable assumptions wherever necessary. Figures to the right indicate full marks. 	
Q.1	(a) (b)	What is the need for defibrillator? Explain DC defibrillator with its schematic. Explain principle of surgical diathermy machine with its schematic also brief types of electro surgery techniques commonly employed in practice.	07 07
Q.2	(a) (b)	Explain principle of dialysis in the artificial kidney. Enlist and explain types of dialyzers. Explain following terms: 1) Clearance 2) Ultra-filtration rate 3) Residual blood	07
	(b)	volume. OR Explain working and applications of pulsed ruby laser.	07
Q.3	(a) (b)	Draw and explain schematic diagram of hemodialysis machine. Explain heart lung machine with necessary diagram. OR	07 07
Q.3	(a) (b)	Write a short note on angiography and angioplasty. Explain principle and operation of microwave diathermy machine.	07 07
Q.4	(a)	What is meaning of LASER coherence. Explain principle of operation, properties, gain medium and pumping mechanism of LASER.	07
	(b)	Explain apnea detector. OR	07
Q.4	(a) (b)	Explain the importance of incubator with its constructional diagram. Explain types of catheters in detail.	07 07
Q.5	(a) (b)	Explain blood leak detector with its block diagram. Write a short note on TENS.	07 07
		OR	
Q.5	(a) (b)	Write a note on implantable defibrillator. What is need of anesthesia? Explain anesthetic delivery system.	07 07
