

GUJARAT TECHNOLOGICAL UNIVERSITY
BE – SEMESTER – VI (OLD).EXAMINATION – WINTER 2016

Subject Code: 160303**Date: 22/10/2016****Subject Name: Therapeutic 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) What is the need for defibrillator? Explain DC defibrillator with its schematic. **07**
(b) Explain principle of surgical diathermy machine with its schematic also brief types of electro surgery techniques commonly employed in practice. **07**
- Q.2** (a) Explain principle of dialysis in the artificial kidney. Enlist and explain types of dialyzers. **07**
(b) Explain following terms: 1) Clearance 2) Ultra-filtration rate 3) Residual blood volume. **07**
- OR**
- (b) Explain working and applications of pulsed ruby laser. **07**
- Q.3** (a) Draw and explain schematic diagram of hemodialysis machine. **07**
(b) Explain heart lung machine with necessary diagram. **07**
- OR**
- Q.3** (a) Write a short note on angiography and angioplasty. **07**
(b) Explain principle and operation of microwave diathermy machine. **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. **07**
- OR**
- Q.4** (a) Explain the importance of incubator with its constructional diagram. **07**
(b) Explain types of catheters in detail. **07**
- Q.5** (a) Explain blood leak detector with its block diagram. **07**
(b) Write a short note on TENS. **07**
- OR**
- Q.5** (a) Write a note on implantable defibrillator. **07**
(b) What is need of anesthesia? Explain anesthetic delivery system. **07**
