

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE SEM-VI Examination-Nov/Dec-2011

Subject code: 160303

Date: 25/11/2011

Subject Name: Therapeutic Instrumentation

Time: 10.30 am -1.00 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 of DC defibrillator? Give technical description of circuit. **07**
(b) Draw and Explain block diagram of Cardioverter. **07**

- Q.2** (a) Explain construction of Coil Haemodialyzer and Hollow Fibre Haemodialyzer. **07**
(b) Write a short note on Portable Kidney machines. **07**

OR

- (b) Explain Schematic diagram of haemodialysis machine. **07**

- Q.3** (a) Explain principle of surgical diathermy machine with various types of electro-surgery techniques. **07**
(b) Explain safety aspects in electro-surgical units. **07**

OR

- Q.3** (a) Explain Gas supply system of Anaesthesia machine. **07**
(b) Explain operating principle of Surgical diathermy analysers. **07**

- Q.4** (a) Draw and Explain schematic diagram of pulsed ruby laser. **07**
(b) Explain block diagram of CO₂ laser. **07**

OR

- Q.4** (a) Explain application of Laser in medicine. **07**
(b) Explain principle of operation, gain medium, pumping mechanism and resonator design of LASER. **07**

- Q.5** (a) What is the working principle of high frequency heat therapy units? Draw and explain circuit diagram of short-wave diathermy unit. **07**
(b) Explain applications of electrotherapy for Pain relief. **07**

OR

- Q.5** (a) Explain Ultrasonic therapy unit with Dosage Control. **07**
(b) Give short description about Neonatal instrument Incubator. **07**
