

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – SUMMER 2013****Subject Code: 160303****Date: 28-05-2013****Subject Name: Therapeutic Instrumentation****Time: 10.30 am - 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) Explain the need of defibrillator. Explain DC defibrillator with schematic diagram. **07**
(b) Explain implantable defibrillator system. Distinguish monophasic and biphasic waveforms used for defibrillator. **07**
- Q.2** (a) Define and explain terminologies related to the performance analysis of dialyzer. **07**
(b) Differentiate parallel flow dialyzer and hollow fibre haemodialyzer. **07**
OR
(b) Discuss principle, working and applications of ultrasonic therapy unit. **07**
- Q.3** (a) Explain the principle and operation of surgical diathermy analyzer. **07**
(b) Discuss the safety aspects in electro-surgical units. **07**
OR
- Q.3** (a) Differentiate the characteristics of various lasers applied in medicine. **07**
(b) How gastric hemorrhage can be controlled by photo-coagulation using argon ion laser. **07**
- Q.4** (a) Explain the various types of waveforms used in electrotherapy. **07**
(b) Explain principle and operation of microwave diathermy machine. **07**
OR
- Q.4** (a) With block diagram explain apnoea detector. **07**
Q.4 (b) How heat loss and production can be controlled in baby incubator? **07**
- Q.5** (a) Explain schematic diagram of anesthesia machine and patient breathing circuit. **07**
(b) Explain various patient breathing systems. **07**
OR
- Q.5** (a) With block diagram explain heart lung machine. **07**
(b) Write short note on: Coronary angiography. **07**
