

GUJARAT TECHNOLOGICAL UNIVERSITY**B E Sem-VI Examination May 2011****Subject code: 160303****Subject Name: Therapeutic Instrumentation****Date: 19/05/2011****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 principle, working and basic block of the instrument used for the measurement of the energy content of discharge pulse in defibrillator. **07**
(b) Discuss DC defibrillator with schematic diagram. Compare Implantable defibrillator with Cardioverter. **07**
- Q.2** (a) With block diagram explain working of Haemodialysis machine. Give composition and concentration of dialysate. **07**
(b) List different types of dialyzers. Explain working of any one in detail. **07**
- OR**
- (b) Explain Portable dialysis machine with its merits and demerits. **07**
- Q.3** (a) Discuss the different electrodes used in surgical diathermy. **07**
(b) Explain the risks associated with electro-surgery. **07**
- OR**
- Q.3** (a) Explain operation of Laser. Show the characteristics and medical applications of different lasers. **07**
(b) Explain Argon-Ion laser and its application as control of gastric hemorrhage by photo-coagulation. **07**
- Q.4** (a) Explain ultrasonic therapy unit for therapeutic purposes. **07**
(b) Write short note on Transcutaneous Electrical Nerve Stimulator. **07**
- OR**
- Q.4** (a) With schematic diagram explain Baby Incubator. **07**
(b) Discuss the different methods involve in Apnoea monitoring in infants. **07**
- Q.5** (a) Discuss the components and systems of Anesthesia Gas Machine. **07**
(b) Compare Mapleson (Non-rebreathing) and Circle breathing circuit for anesthesia machine **07**
- OR**
- Q.5** (a) Write short note on: Heart Lung Machine. **07**
(b) Compare X-ray, Computed Tomography and Magnetic Resonance Based Angiography techniques. **07**
