

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI- EXAMINATION – SUMMER 2016

Subject Code:160303

Date:09/05/2016

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-01 (A) What is fibrillation? Explain the working principle of DC defibrillator. Why it is not used to cure atrial fibrillation? 07
- (B) Draw and explain the basic circuit diagram of DC defibrillator. 07
- Q-02 (A) Explain the risk associated with surgical diathermy and the safety measures for them. 07
- (B) Draw and explain the block diagram of typical electrosurgical unit. 07
- OR**
- (B) Explain the modes of ESU with current waveforms. 07
- Q-03 (A) Write a short note on short-wave diathermy. 07
- (B) Write a short not on ultrasonic diathermy. 07
- OR**
- Q-03 (A) Write a short note on TENS. 07
- (B) What is electrotherapy? Discuss the types of waveforms used in electrotherapy. 07
- Q-04 (A) Draw and explain the basic block diagram of hemodialysis machine. 07
- (B) Explain the types of dialyzers used in hemodialysis machine with their advantages and disadvantages. 07
- OR**
- Q-04 (A) Explain the following components of hemodialysis machine. 07
- a) Proportionating pump
- b) Blood leak detector
- c) Air bubble detector
- d) Heparin infusion pump
- e) Ultrafiltration rate monitor
- (B) Draw the schematic representation of heart-lung machine and explain its working. 07
- Q-05 (A) What is LASER? Explain the process of LASER generation. Also explain the conditions which are necessary for LASER generation. 07
- (B) Enlist and explain the components of LASER system. 07
- OR**
- Q-05 (A) Explain in brief: the components of anaesthetic delivery system. 07
- (B) Explain the vapour delivery unit and types of vaporizers in anaesthesia machine. 07