

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VI (NEW) EXAMINATION – WINTER 2018

Subject Code:2160303

Date:27/11/2018

Subject Name:Therapeutic Techniques & Instrumentation

Time: 02:30 PM TO 05:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

| | | MARKS |
|-----|--|-------|
| Q.1 | (a) What is the need of Cardiac pacemaker? | 03 |
| | (b) What is fibrillation? Which therapeutic technique is used to recover the given condition? | 04 |
| | (c) Explain DC Defibrillator with necessary circuit Diagram. | 07 |
| Q.2 | (a) Define the following terms: (1) Tidal Volume (2) Vital Capacity (3) Total Lung Capacity | 03 |
| | (b) Explain difference between monophasic and biphasic waveform in defibrillator. | 04 |
| | (c) Explain the principle of dialysis in the artificial kidney with appropriate diagram. | 07 |
| | OR | |
| | (c) Explain detail classification of Ventilators | 07 |
| Q.3 | (a) Describe functions of kidney. | 03 |
| | (b) Enlist types of dialyzer. Explain it briefly. | 04 |
| | (c) Draw the schematic diagram of haemodialysis machine with proper diagram. | 07 |
| | OR | |
| Q.3 | (a) Explain various types of electro-surgery techniques | 03 |
| | (b) Define: Electrotomy, coagulation. Fulguration, Desiccation | 04 |
| | (c) Explain safety aspects of Electro-surgical units. | 07 |
| Q.4 | (a) Draw the diagram which explains construction and working of laser | 03 |
| | (b) State principle operation of laser in detail. | 04 |
| | (c) Discuss the working principles and applications of CO2 LASER system. | 07 |
| | OR | |
| Q.4 | (a) What are the types of incubators? | 03 |
| | (b) Write a short note on Spinal Cord Stimulator. | 04 |
| | (c) Explain principle and operation of microwave diathermy machine. | 07 |
| Q.5 | (a) Explain the need for Anesthesia | 03 |
| | (b) Explain apnea detection technique in brief. | 04 |
| | (c) Explain Vapour delivery system of Anesthesia machine. | 07 |
| | OR | |
| Q.5 | (a) Explain balloon angiography. | 03 |
| | (b) Explain the following terms (i) Absolute Humidity (ii) Relative Humidity | 04 |
| | (c) Write a short note on Biotelemetry and their clinical significance | 07 |
