

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160303****Date:14-12-2022****Subject Name:Therapeutic 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.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1 (a) What is fibrillation? Explain need of Defibrillator.	03
(b) Discuss about electrodes used for defibrillator.	04
(c) Write a short note on types of implantable pacemakers.	07
Q.2 (a) Give details about coil Dialyzer.	03
(b) Describe Asynchronous and Synchronous Pacemaker.	04
(c) Explain Pacer-cardioverter-defibrillator in detail.	07
OR	
(c) Write a short note on Electrosurgical diathermy machine.	07
Q.3 (a) Describe Blood leak detector in brief.	03
(b) Explain bipolar and mono-polar Techniques of Electrosurgical Diathermy.	04
(c) Draw Hemodialysis Machine and explain Blood flow part.	07
OR	
Q.3 (a) Draw a diagram which shows Principle of dialysis in Artificial Kidney.	03
(b) Discuss about working operation of Stents.	04
(c) Write a short note on Performance analysis of Dialyzer.	07
Q.4 (a) Explain principle of high frequency heat therapy.	03
(b) Describe Condenser method for shortwave diathermy.	04
(c) Write a short note on heart lung machine.	07
OR	
Q.4 (a) Define: Lung Compliance, tidal volume, Mean Airway Pressure.	03
(b) Draw Block diagram of an ultrasonic therapy unit.	04
(c) Write a short note on Transcutaneous electrical nerve stimulation (TENS).	07
Q.5 (a) What is the need for Anesthesia?	03
(b) Explain Positive-pressure ventilators.	04
(c) Write a short note on Construction of Baby Incubator.	07
OR	
Q.5 (a) What is Syringe Pump?	03
(b) Explain the use of Nebulizers in humidifier?	04
(c) Discuss about Gas supply system of Anesthesia machine.	07
