

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- VI EXAMINATION – SUMMER 2026

Subject Code:3160301

Date:08-06-2026

Subject Name: Diagnostic 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.
4. Simple and non-programmable scientific calculators are allowed.

	MARKS
Q.1* (a) Draw ECG waveform & explain its relevance with physiology of Heart.	03
(b) Explain various Heart rate measurement techniques.	04
(c) Draw & explain block diagram of ECG machine.	07
Q.2 (a) Write a short note on Holter Monitoring.	03
(b) Describe various Nervous system disorders.	04
(c) Design signal conditioning circuit for EMG.	07
OR	
(c) Draw & explain MEG machine with its operating principle.	07
Q.3 (a) Define Tidal Volume, Vital Capacity and Inspiratory Reserve Volume.	03
(b) What is Pneumotachometer? Explain working principle of Pneumotachometer.	04
(c) Enlist types of Spirometer and explain any one with neat diagram.	07
OR	
Q.3 (a) Define Ventilation, Distribution & Diffusion for Pulmonary Function measurement.	03
(b) Explain Spirometry with its significance? How it can be performed?	04
(c) Explain block diagram of Pulmonary Function Analyzer.	07
Q.4 (a) Describe various Ocular disorders.	03
(b) Write a short not on Perimetry.	04
(c) What is Audiometer? Explain types of Audiometers.	07
OR	
Q.4 (a) What is Audiometry? Give its classification.	03
(b) Write a short note on Electrocochleogram.	04
(c) Illustrate Electrooculography with neat diagram.	07
Q.5 (a) Enlist various transducers used for Audiometry.	03
(b) Define Telemedicine with its importance.	04
(c) Draw & explain Multichannel wireless Telemetry system.	07
OR	
Q.5 (a) What is Biotelemetry? Briefly explain Wireless Telemetry.	03
(b) Explain Applications of Biotelemetry on Wi-Max network.	04
(c) Describe Delivery modes in Telemedicine.	07
