

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI(NEW) EXAMINATION – WINTER 2022****Subject Code:3160301****Date:13-12-2022****Subject Name:Diagnostic 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) Explain any three cardiovascular system disorders.	03
(b) Illustrate different types of artifacts in ECG recording.	04
(c) Describe 12-lead ECG configuration with neat diagram.	07
Q.2 (a) Write a short-note Holter monitoring.	03
(b) Explain various techniques for Heart-rate measurement.	04
(c) What is need of Isolation pre-amplifier in ECG machine? Draw & explain Isolation pre-amplifier.	07
OR	
(c) What is Montage? Explain EEG machine with neat diagram.	07
Q.3 (a) Explain three nervous system disorders.	03
(b) Write a short-note on Nerve conduction velocity measurement.	04
(c) Describe construction & working principle of Magnetoencephalograph.	07
OR	
Q.3 (a) Explain block-diagram of EMG machine.	03
(b) Illustrate 10-20 electrode placement system for EEG with diagram.	04
(c) Describe Audiometer system Bekesy with neat diagram.	07
Q.4 (a) Write a short-note on Respiration rate measurement.	03
(b) Define Tidal volume, Inspiratory Reserve Volume, Functional Residual Capacity with neat diagram.	04
(c) Enlist types of spirometer and explain any one in detail.	07
OR	
Q.4 (a) Illustrate Applications of Telemedicine.	03
(b) Write a short-note on Implantable Multi-sensor Radiotelemetry.	04
(c) Explain multi-channel wireless Telemetry system with diagram.	07
Q.5 (a) Describe three ocular system disorders.	03
(b) Write a short-note on Electronystagmography.	04
(c) With neat diagram, explain Electroretinography(ERG) in detail.	07
OR	
Q.5 (a) Explain Air conduction & Bone conduction.	03
(b) Write a short-note on Otoscopes.	04
(c) Explain types of Audiometers and its applications in detail.	07
