

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2023****Subject Code:3160301****Date:04-07-2023****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) Explain Construction of Fleisch Pneumotachometer.	03
(b) Give Frequency Range of EEG. And Draw neat Block Diagram of EEG Machine.	04
(c) Explain ECG telemetry system with necessary Block diagram.	07
Q.2 (a) Explain: Brain Stroke, Cerebral Palsy, Parkinson's Disease.	03
(b) Write a Brief Note on Magnetoencephalograph.	04
(c) Explain Basic Spirometer and Wedge spirometer in Detail.	07
OR	
(c) Define: TV, IRV, ERV, TLC, VC, RV, FEV	07
Q.3 (a) Draw neat ECG wave Form and Give Significance of Each wave of ECG.	03
(b) Give Frequency Range of ECG. And discuss about various ECG artifacts.	04
(c) Give characteristics of Various Heart sound and Explain Instrumentation of Phonocardiography with necessary Block Diagram.	07
OR	
Q.3 (a) What is Cardiac Stress Testing? Explain Various Protocol for Stress Testing.	03
(b) Give Frequency Range of EMG. And discuss about various EMG artifacts.	04
(c) Explain ECG Machine with necessary Block Diagram.	07
Q.4 (a) What is Glaucoma, Cataract and Nystagmus.	03
(b) Define Visual Acuity. Explain Static and Dynamic Perimetry in a Brief.	04
(c) Differentiate between Air conduction & Bone Conduction. Describe Beksey Audiometry system with necessary Diagram.	07
OR	
Q.4 (a) Explain ABER and ASSR in a brief.	03
(b) What is the audible frequency range for Human? Explain Mechanism of hearing.	04
(c) Explain different Types of Contact and Non-contact Tonometer in detail.	07
Q.5 (a) Enlist different techniques of heart rate measurement and Explain Beat to Beat Calculation of Heart Rate.	03
(b) Explain Indicator dilution Method of cardiac output measurement.	04
(c) Explain EMG machine with neat Block Diagram.	07
OR	
Q.5 (a) What is telemedicine. Discuss advantages of Telemedicine.	03
(b) Explain 10/20 electrode montage system with necessary Diagram.	04
(c) Explain various Modulation systems used in Wireless telemetry system.	07
