

Enrolment No./Seat No\_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2024**

**Subject Code:3160301**

**Date:15-05-2024**

**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.

		<b>MARKS</b>
<b>Q.1</b>	(a) Define: Arrhythmias, Myocardial Infraction, Stroke.	<b>03</b>
	(b) Enlist various Unipolar and Bipolar leads used for ECG measurement.	<b>04</b>
	(c) Give Significance of ECG waveform and Draw and Explain ECG machine with necessary block diagram.	<b>07</b>
<b>Q.2</b>	(a) Explain in Brief: Asthma, COPD, Bronchitis	<b>03</b>
	(b) Explain Basic Spirometer with necessary Diagram.	<b>04</b>
	(c) Explain various techniques for Cardiac output Measurement.	<b>07</b>
	<b>OR</b>	
	(c) What is Phonocardiography? Explain instrumentation of phonocardiography with necessary block diagram. .	<b>07</b>
<b>Q.3</b>	(a) Write a Brief note on EOG.	<b>03</b>
	(b) Explain various Pulmonary Lung Volumes and Capacities with necessary Graph.	<b>04</b>
	(c) What is NCV? Explain Technique to measure NCV.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Give application of Ophthalmoscope.	<b>03</b>
	(b) Explain Wedge Spirometer in a Brief.	<b>04</b>
	(c) Explain EEG Machine with necessary Block Diagram.	<b>07</b>
<b>Q.4</b>	(a) Give the Full form of: ENG, ERG, ABER.	<b>03</b>
	(b) Enlist various Ocular disorders. And explain any four of Them.	<b>04</b>
	(c) Explain Mechanism of hearing and Explain Various types of Hearing loss in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain: Applanation Tonometry	<b>03</b>
	(b) Differentiate between Pure Tone and Speech Audiometry.	<b>04</b>
	(c) Explain Bekesy Audiometer with necessary Block Diagram.	<b>07</b>
<b>Q.5</b>	(a) Give the advantages of Telemedicine.	<b>03</b>
	(b) Enlist Essential Parameters of telemedicine.	<b>04</b>
	(c) Explain Multichannel Wireless Telemetry System with Necessary Block diagram.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) What is Masking in Audiometry?	<b>03</b>
	(b) Explain various types of artifacts associated with EMG.	<b>04</b>
	(c) Explain ECG telemetry System with Necessary Block diagram.	<b>07</b>

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