

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VI (New) EXAMINATION – WINTER 2019****Subject Code: 2160301****Date: 04/12/2019****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.

		MARKS
Q.1	(a) Write a short note on Phonocardiography.	03
	(b) Explain various cardiovascular disorders diagnosed using ECG.	04
	(c) What is need of Isolation preamplifier in ECG? Draw & explain block diagram of Isolation preamplifier.	07
Q.2	(a) Explain application & principle of Pulse-oximeter.	03
	(b) Explain working of Flame-photometer with neat diagram.	04
	(c) Draw block diagram of Spectrophotometer and explain each block in detail.	07
OR		
	(c) Enlist types of Chromatograph and explain any one in detail.	07
Q.3	(a) Give Frequency range & Amplitude for EEG waves.	03
	(b) Explain Electrophoresis technique with its application.	04
	(c) Define Montage. Explain working of each block of EEG machine with neat diagram.	07
OR		
Q.3	(a) Explain various disorders diagnosed with EEG.	03
	(b) Write a short note on Autoanalyzer.	04
	(c) Explain Magnetoencephalograph(MEG) with its principle.	07
Q.4	(a) Explain Tonometry technique.	03
	(b) Explain ERG with its application.	04
	(c) Draw & explain block diagram of Blood Gas Analyzer.	07
OR		
Q.4	(a) Explain construction of Blood PCO ₂ measurement electrode.	03
	(b) Explain Electronystagmogram.	04
	(c) Enlist various methods of Blood cell counting. Explain Coulter counter with its advantages & disadvantages.	07
Q.5	(a) Enlist types of endoscopy with its application.	03
	(b) Define Tidal Volume(TV), Expiratory Reserve Volume(ERV), Vital Capacity(VC) with diagram.	04
	(c) Explain Audiometry and types of Audiometer.	07
OR		
Q.5	(a) What is Pneumotachometers? Explain basic working principle of Pneumotachometers.	03
	(b) Explain construction and working of Basic Spirometer with neat diagram.	04
	(c) Draw diagram of basic Endoscope system and explain each block in detail.	07
