Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

		BE - SEMESTER-VI (NEW) - EXAMINATION – SUMMER 20	17
Subje	ect C	Code: 2160301 Date: 1	27/04/2017
•		lame: Diagnostic Instrumentation	
_		_	Marks: 70
			Marks. 70
Instru			
		Attempt all questions. Make suitable assumptions wherever necessary.	
		Figures to the right indicate full marks.	
	J. 1	rigures to the right indicate run marks.	MARKS
Q.1	_	Short Questions	14
	1	Define Holter Cardiography.	
	2	What is the Nerve Conduction Study or NCS?	
	3	Enlist the limitation of sEMG.	
	4	What is an Endoscopy?	
	5	Define Pitch.	
	6	What is the function of Jelly or paste in bio signal recording?	
	7	Enlist neurological disorders diagnosed by EEG.	
	8	electrodes are used to reducing the movement artifacts	
		in EEG.	
	9	Amplifier must have highto minimize stray	7
		interface signal from power lines and other electrical equipment's	
	10	Explain the Parkinson Disease with Symptoms.	
	11	What are the commonly used methods for blood cell counting?	
	12	Explain the Beer-Lambart law with the help of diagram.	
	13	Why is it necessary to maintain acid base balance in the body?	
	14	Define Tidal volume.	
Ω_2	(a)	Draw an Alpha, Beta, Theta, Delta waveform with frequency range.	03
Q.2		Describe the working of the commonly used transducer in	
	(b)	audiometry.	U-1
	(c)	Explain the any one application of electromyogram with a near	07
	(C)	sketch.	07
		OR	
	(a)	Explain the construction and working of Fleisch Pneumotachometers	. 07
Q.3	(c) (a)	Describe the available methods for computerized analysis of EEG	
Q.S	(a)	Signals.	03
	(b)	Explain the basic functioning of basic audiometer. What are the	04
	(D)	general requirements of audiometers?	04
	()		07
	(c)	What is ECG Lead? Describe various types of Leads used for	07
		recording ECG Signal.	
0.3	(-)	OR	02
Q.3	(a)	Why we measure sEMG?	03
	(b)	Explain the various artefacts encountered during ECG recording.	04
0.4	(c)	Write a brief note on origin of heart sounds.	07
Q.4	(a)	Distinguish between EOG and ENG.	03
	(b)	What are the essential parts of flame photometers? Explain their	04
		functions.	^-
	(c)	Explain the pH measurement process with microcapillary electrode.	07

OR

(a)	Explain the various sensors used for the recording of heart sounds.	
(b)	What are the criteria for detection of QRS?	04
(c)	What are the Types of Endoscopy? Explain it with tools and	07
	•	
(a)	Draw a major building blocks of an EOG machine.	03
(b)	Explain the various radiation source and filters for spectrophotometer.	04
(c)	Draw the block diagram of a coulter counter and explain its working.	07
	OR	
(a)	Explain the various exercise protocols used in Treadmill tests.	03
(b)	What is blood pCO ₂ and how is it measured?	
(c)	Explain the impedance pneumography for measurement of respiratory function.	07
	(b) (c) (a) (b) (c) (a) (b)	 (b) What are the criteria for detection of QRS? (c) What are the Types of Endoscopy? Explain it with tools and necessary targeted area for treatment? (a) Draw a major building blocks of an EOG machine. (b) Explain the various radiation source and filters for spectrophotometer. (c) Draw the block diagram of a coulter counter and explain its working. OR (a) Explain the various exercise protocols used in Treadmill tests. (b) What is blood pCO₂ and how is it measured? (c) Explain the impedance pneumography for measurement of
