Subject Code:2161712

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

BE - SEMESTER-VI (NEW) - EXAMINATION - SUMMER 2016

Date:17/05/2016

	•	ect Name: Bio-Potential Instrumentation : 10:30 AM to 01:00 PM Total Marks: ctions:  1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks.	70
Q.1	, ,	Draw and explain each block of generalized physiological Measurement System of human body.	07
	<b>(b)</b>	Enlist the physiological systems in human body. Explain any one with neat diagram.	07
Q.2	2 (a) (b)	Write a short note on Measurement Errors & its Analysis. Explain Anatomy & Physiology of the heart.	07 07
		OR	
	<b>(b)</b>	Define following terms: <b>a.</b> SNR <b>b.</b> Noise Factor <b>c.</b> Noise Figure <b>d.</b> Noise Temperature	07
Q.3	<b>3</b> (a)	Explain the generation of bio electric potential at the cellular level with necessary waveform	07
	<b>(b)</b>	Write short note on following. <b>a.</b> Instrumentation Amplifier <b>b.</b> Isolation amplifier	07
		OR	
Q.3	(a) (b)	<ul> <li>Write short note on Tactics and signals processing for improved sensing.</li> <li>Write short note on following.</li> <li>a. ECG readout devices</li> <li>b. Common ECG machine Faults &amp; its troubleshooting</li> </ul>	07 07
Q.4	l (a)	What is polarization? Explain the characteristics of polarizable and non-polarizable	07
	<b>(b)</b>	electrodes with example.	07
		OR	
Q.4	(a) (b)	What is EEG? Explain 10-20 electrode system Explain body surface electrodes with neat diagrams	07 07
Q.5	(a) (b)	Draw neat sketch of ECG waveforms & wigger's diagram & explain it. Explain lead system of ECG in detail.	07 07
		OR	
Q.5	(a) (b)	Write short note on physiological effects of electricity Discuss EEG recording modes	07 07

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