Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VI • EXAMINATION – SUMMER • 2014

Subject Code: 160305 **Date: 26-05-2014**

Subject Name: Biomedical Signal Processing

Time: 10:30 am - 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.**

Q.1	**(a)**	List various types of signals with examples.	**07**
	(b)	Explain the energy and power of signal using suitable examples.	**07**
Q.2	**(a)**	Explain the magnitude and phase for frequency response rational system functions.	**07**
	(b)	Write short note on; All pass system.	**07**
		OR	
	(b)	Write short note on; Maximum phase system.	**07**
Q.3	**(a)**	Explain the basic structures of IIR systems.	**07**
	(b)	Explain the effect of round off noise in digital filters.	**07**
		OR	
Q.3	**(a)**	Explain FIR equirriple approximation.	**07**
	(b)	List various windowing techniques for filter design. Explain any one with example.	**07**
Q.4	**(a)**	How representation of periodic signals can be done using discrete Fourier transforms.	**07**
	(b)	With suitable example explain linear convolution using DFT.	**07**
		OR	
Q.4	**(a)**	What are the applications of Goertzel algorithm in signal processing? Explain.	**07**
	(b)	With example explain decimation-in-time FFT.	**07**
Q.5	**(a)**	Compare DSP processor with microprocessor. Explain the applications of DSP processors.	**07**
	(b)	Explain the architecture of DSP processor.	**07**
		OR	
Q.5	**(a)**	Explain the method of EMG signal Analysis.	**07**
	(b)	What are the various methods for QRS detections? Explain any one in detail.	**07**

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