Subject Code:160305

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

**BE - SEMESTER-VI- EXAMINATION - SUMMER 2016** 

Date:11/05/2016

Subject Name:Bio-Medical Signal Processing Time: 10:30 AM to 01:00 PM Instructions:  Total Marks: 70			70
	nistruc	<ol> <li>Attempt all questions.</li> <li>Make suitable assumptions wherever necessary.</li> <li>Figures to the right indicate full marks.</li> </ol>	
Q.1	(a)	Explain the concepts of linearity, time invariance, stability and causality of LTI system.	07
	<b>(b)</b>	•	07
Q.2	2 (a)	Explain the magnitude and phase for frequency response rational system functions.	07
	<b>(b)</b>	Write short note on: All pass Filter.	07
	<b>(b)</b>	OR Write short note on: Maximum phase system.	07
Q.3		• •	07
Ų.	(b)	$\cdot$	07
Q	3 (a)		07
	<b>(b)</b>	-	07
Q.4	4 (a) (b)	Y (n)-3/4y (n-1) +1/8y (n-2) =x (n) +1/2x (n-1). Derive the direct form I and direct form II structures.	07 07
Q.4	4 (a) (b)	Compute the 4 point DFT of $x[n] = u$ (n)-u (n-2).	07 07
Q.5	5 (a) (b)	Write short note on Goertzel Algorithm.  Compare decimation-in-time and decimation-in-frequency FFT  Algorithms.  OR	07 07
Q.5	5 (a)		07
	<b>(b)</b>	What is "twiddle factor" of DFT? Explain the difference between DFT and DTFT?	07

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