Seat No.:_____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VIII(NEW) EXAMINATION – SUMMER 2019

Subject Code:2182410 Date:09/05/2019

Subject Name:Digital Signal Controllers

Time:10:30 AM TO 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)**	Enlist signal processing requirements for Power Electronics Systems.	**03**
	(b)	What is modified Harvard architecture employed in DSP?	**04**
	(c)	Discuss project environment of CCS. Explain how to import an available project in CCS.	**07**
Q.2	**(a)**	"Digital signals controllers are essential for power supply design" Justify the statement.	**03**
	(b)	How memory content can be viewed in the CCS?	**04**
	(c)	Enlist C2000 microcontrollers and explain any one in detail.	**07**
		OR	
	(c)	Discuss various development tools for C2000 microcontroller family.	**07**
Q.3	**(a)**	Describe the frequency domain sampling of signal in detail.	**03**
	(b)	What is CCS? How multi-processing can be carried out using CSS?	**04**
	(c)	State and explain various development tools used in CSS.	**07**
		OR	
Q.3	**(a)**	Describe the reconstruction of signal from its samples in detail.	**03**
	(b)	Describe how the watch window can be used in CSS?	**04**
	(c)	Using a suitable example, state various steps for testing and debugging of a program in CSS.	**07**
Q.4	**(a)**	Explain 32 bit timer of 28335 in brief.	**03**
	(b)	State various on chip peripherals available in TMS320F28X Processors.	**04**
	(c)	Draw internal block diagram of 28335.	**07**
		OR	
Q.4	**(a)**	What is memory mapped register in case of TMS320F28X controller.	**03**
	(b)	Draw only block diagram of TMS320F28X Processors.	**04**

	(c)	Discuss the Serial Communications Interface modules for DSC.	**07**
Q.5	**(a)**	Define and explain Macros and its usefulness in program development.	**03**
	(b)	Explain in brief the function of PIE block.	**04**
	(c)	Write a suitable program for PWM generation for a controller.	**07**

OR

Q.5	**(a)**	Define and explain assembler and its usefulness in program development.	**03**
	(b)	Explain GPIO and its utility in signal reading.	**04**
	(c)	Write a suitable program for timer interrupt for a controller.	**07**

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