

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2021****Subject Code:3172416****Date:15/12/2021****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.
4. Simple and non-programmable scientific calculators are allowed.

		<b>MARKS</b>
<b>Q.1</b>	(a) Define DSC. Explain application of DSC in power electronics field.	<b>03</b>
	(b) Enlist subfamilies of DSC.	<b>04</b>
	(c) Explain main features of C2000 real time microcontroller. Compare DELFINO and PICOLO family of Microcontrollers.	<b>07</b>
<b>Q.2</b>	(a) List the advantages & dis-advantages of Harvard & Von-Neuman architecture of processor.	<b>03</b>
	(b) What is CCS? Explain basic features available in CCS.	<b>04</b>
	(c) Explain functional block diagram of TMS320F28335.	<b>07</b>
	<b>OR</b>	
	(c) Describe the Frequency domain sampling of a signal in detail	<b>07</b>
<b>Q.3</b>	(a) What is IDE? Discuss CCS as IDE.	<b>03</b>
	(b) Discuss utility of Break points and Probe points in code composer studio.	<b>04</b>
	(c) Explain Multi processing in code composer studio.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Discuss utility of watch window in CSS.	<b>03</b>
	(b) Explain data file format in code composer studio.	<b>04</b>
	(c) Discuss development tools used in CCS and also explain project environment of CCS.	<b>07</b>
<b>Q.4</b>	(a) Explain Memory map of TMS320F28335.	<b>03</b>
	(b) Explain PIE block diagram.	<b>04</b>
	(c) Explain about various peripherals of TMS320F28335 in brief.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	(a) Explain 32 bit timers of TMS320F28335 in brief	<b>03</b>
	(b) Explain GPIO of TMS320F28335.	<b>04</b>
	(c) Explain ADC module of TMS320F28335 in detail.	<b>07</b>
<b>Q.5</b>	(a) Describe utility of Assembler in software development tool.	<b>03</b>
	(b) Explain the following terms:- (i) Assembler directives (ii) linker	<b>04</b>
	(c) Explain Software development tool flow in detail.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	(a) Discuss utility of Object modules in software development tool.	<b>03</b>
	(b) Explain Macros and its usefulness in program development.	<b>04</b>
	(c) Write a suitable program for timer interrupt of controller.	<b>07</b>

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