

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2018****Subject Code: 2182410****Date: 15/11/2018****Subject Name: Digital Signal Controllers****Time: 02:30 PM TO 05:00 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) Discuss utility of digital signal controller in power electronics field. **03**  
(b) Explain difference between digital signal controllers and digital signal processors. **04**  
(c) Explain the basic architecture of a digital signal processor. **07**
- Q.2** (a) Enlist subfamilies of DSC. **03**  
(b) Compare PICOLLO series and DELFINO series microcontrollers. **04**  
(c) Discuss main features of C2000 real time microcontroller. **07**
- OR**
- (c) Explain sampling and reconstruction of signal in frequency domain. **07**
- Q.3** (a) Explain basic features available in code composer studio. **03**  
(b) Discuss utility of Break points and Probe points in code composer studio. **04**  
(c) Explain the code composer studio as integrated development environment. **07**
- OR**
- Q.3** (a) Discuss about data file format in code composer studio. **03**  
(b) Discuss utility of Multi processing in code composer studio. **04**  
(c) Explain enhanced PWM (ePWM) module of DSC 2833X series controller in detail. **07**
- Q.4** (a) Enlist various peripherals of DSC 2833X series controller. **03**  
(b) Explain only functional block diagram of TMS320F28335 controller. **04**  
(c) Explain enhanced Analog-to-Digital Converter (ADC) Module of DSC 2833X series controller in detail. **07**
- OR**
- Q.4** (a) Enlist various register maps of DSC 2833X series controller. **03**  
(b) Explain Serial Peripheral Interface (SPI) Module of DSC 2833X series controller in brief. **04**  
(c) Discuss CPU Timers of DSC 2833X series controller in detail. **07**
- Q.5** (a) Discuss utility of Object modules in software development tool. **03**  
(b) Discuss SCI-Register file structure in brief. **04**  
(c) Explain Software development tool flow in detail. **07**
- OR**
- Q.5** (a) Describe utility of Assembler in software development tool. **03**  
(b) Write a suitable program for timer interrupt for a controller. **04**  
(c) Discuss macro language description of TMS320C28x in detail **07**

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