

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER– VIII (New) EXAMINATION – WINTER 2019****Subject Code: 2182410****Date: 21/11/2019****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. Write only required answer. Avoid writing irrelevant and unnecessary too long answers.
4. Figures to the right indicate full marks.

- Q.1** (a) What is DSP? **03**
(b) Draw block diagram / architecture of a simple DSP. **04**
(c) Draw generalized block diagram of a DSP and explain how DSP differs from microcontroller. **07**

- Q.2** (a) State various members of C2000 family of micro controllers. **03**
(b) What are the signal processing requirements for Power Electronics System? **04**
(c) Justify the statement “Digital Signal Processing is must for Power Electronics Systems”. **07**

OR

- (c) Compare PICOLO and DELFINO subfamily. State areas of applications for both families. **07**
- Q.3** (a) State name of the IDE provided by TI for C2000 family of microcontrollers. **03**
(b) What are different facilities in IDE in Q3(a) above? **04**
(c) Explain how multiprocessing can be carried out using IDE of above Q3(a). **07**

OR

- Q.3** (a) State various on chip peripherals available in TMS320F283xx processors. **03**
(b) Explain how memory content can be viewed using IDE of TI. **04**
(c) Explain how watch window and graph window can be useful in debugging. **07**
- Q.4** (a) What is MAC operation? Explain its usefulness. **03**
(b) State different types of C2000 instructions. **04**
(c) State sources of interrupt in TI 28335. **07**

OR

- Q.4** (a) State on chip peripherals available in 28335. **03**
(b) What is GPIO with reference to 28335? **04**
(c) With neat wave form explain how noise pulses can be eliminated from getting read at GPIO pin. **07**
- Q.5** (a) What is PIE? **03**
(b) Draw block diagram of PIE. **04**
(c) Explain PIE block diagram above. **07**

OR

- Q.5** (a) Draw block diagram of ADC module in TI28335 **03**
(b) Draw functional diagram of a GPIO pin in TI28335. **04**
(c) Explain concept of HRPWM. **07**
