

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII(NEW) • EXAMINATION – WINTER 2016

Subject Code:2172407**Date:21/11/2016****Subject Name:Embedded Systems for Power Electronics****Time:10.30 AM to 1.00 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) Describe the advantages and disadvantages of Digital Signal Processing Systems. **07**
- (b) Explain the use of fixed point and floating point numbers in DSP based systems. **07**

- Q.2** (a) Describe following addressing modes: (1) Register indirect addressing mode (2) Memory direct addressing mode (3) Short addressing mode **07**
- (b) Describe the differences between fixed point data path and floating point data path with advantages of floating point data path. **07**

OR

- (b) Explain Overflow, Underflow and Rounding operations with examples in floating point arithmetic unit. **07**

- Q.3** (a) What is Interlocking? Justify the requirements of Interlocking in DSP systems. **07**
- (b) Describe the operations associated with pipeline while handling the interrupt request. **07**

OR

- Q.3** (a) Explain in detail the reasons for the introduction of wait states. **07**
- (b) Describe following terms: (1) Orthogonality (2) Hardware looping **07**

- Q.4** (a) Justify the requirements of Timer in DSP systems. **07**
- (b) Explain parallel I/O ports and Bit I/O ports with significant differences. **07**

OR

- Q.4** (a) Describe the use of Serial ports on DSP chips. **07**
- (b) What do you mean by debugging of a system? Explain the features associated with Scan based emulation. **07**

- Q.5** (a) Explain the factors for comparing several In Circuit Emulators. **07**
- (b) What do you mean by multitasking environment? How Real Time Operating System is different from general purpose Operating System? **07**

OR

- Q.5** (a) Explain the use and working of Code Composer Studio for application development. **07**
- (b) Explain the high level languages for DSP based system developments. **07**
