

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – WINTER • 2014****Subject code: 1722906****Date: 05-12-2014****Subject Name: Embedded and Real Time Systems****Time: 02:30 pm - 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) Describe IC technology and design technology **07**
(b) Draw and explain function block diagram of 8051 microcontroller **07**

- Q.2** (a) Write short note on : Real time system **07**
(b) Compare single-purpose, application-specific and general purpose processor **07**

OR

- (b) Explain design challenges and optimizing design metrics related to Embedded systems **07**

- Q.3** (a) Write short note on : USART and PWM interfacing. **07**
(b) Write short note on : PIC(16F72) processor. **07**

OR

- Q.3** (a) Write short note on : RISC Concepts **07**
(b) Explain I/O ports of microcontroller **07**

- Q.4** (a) Explain Semaphores-deadlock- process stack management **07**
(b) Explain Interrupts and Timers in detail **07**

OR

- Q.4** (a) Explain different addressing modes of 8051 microcontroller with suitable examples. **07**
(b) Explain in detail round robin primitive rate monotonic foreground and background. **07**

- Q.5** (a) Explain Stepper Motor control using 8051 Microcontroller. **07**
(b) Explain ADC /DAC interfacing with microcontroller. **07**

OR

- Q.5** (a) Explain interfacing of Keyboard and LED display **07**
(b) Explain DC Motor speed control using 8051 Microcontroller. **07**
