

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2013****Subject code: 1722906****Date: 05-06-2013****Subject Name: Embedded and Real Time System****Time: 10.30 am – 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.

- Q.1** (a) What is Embedded systems? Explain An embedded system with example. **07**
- (b) Explain different addressing modes of 8051 microcontroller with example . **07**
- Q.2** (a) Draw and explain function block diagram of 8051 microcontroller. **07**
- (b) Explain semaphores-deadlock-process and stack management. **07**
- OR**
- (b) Explain design challenges and optimizing design metrics related to Embedded systems **07**
- Q.3** (a) Give types of processor and explain basic architecture, operation and design of any one processor **07**
- (b) Discuss importance of Interrupt. Explain the interrupts of 8051 Microcontroller . **07**
- OR**
- Q.3** (a) Explain Stepper Motor Interfacing with 8051 Microcontroller. **07**
- (b) Compare general purpose processor, application- specific processor and single-purpose processor **07**
- Q.4** (a) Describe architecture of PIC(16F72) processor in detail. **07**
- (b) Explain round robin primitive rate monolithic foreground and background systems. **07**
- OR**
- Q.4** (a) Explain Concept of Real Time system with suitable example **07**
- (b) Explain Timers and various timer modes of 8051 microcontroller. **07**
- Q.5** (a) What is the basic difference between UART and USART? Explain in detail USART. **07**
- (b) Write short note on : RISC concepts **07**
- OR**
- Q.5** (a) Write short note: IC technology & design technology **07**
- (b) Explain how Keyboard and LED display are interfaced with 8051 microcontroller. **07**
