

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

M. E. IST Semester–Remedial Examination – July- 2011

Subject code: 710409N

Subject Name: Embedded System Design

Date: 12/07/2011

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)** Answer the following questions.
1. Define H/W – S/W Co-design. **01**
 2. Write in brief Scheduler. **02**
 3. What is Multitasking? **02**
 4. How Thread is being implemented? Write in brief. **02**
- (b)** Write notes on following topics.
1. Write a note on I²C. **04**
 2. JTAG Port **03**
- Q.2 (a)** Explain all types of Embedded memories. **07**
- (b)** Discuss External System Interfacing w.r.to Embedded systems with a suitable example. Discuss implementation challenges associated with it. **07**
- OR**
- (b)** Describe SRAM & DRAM Controllers in detail. **07**
- Q.3 (a)** Discuss interface between Analog –Digital sections with a suitable example. **07**
- (b)** Write a note on all Embedded Applications in detail. **07**
- OR**
- Q.3 (a)** List all Embedded Design Metrics parameters and discuss any six of them in detail. **07**
- (b)** Draw architectural diagram of embedded simple microprocessor where PC = IR=16 bit, M= 64 k x 16 bit and RF = 16X16 BIT. **07**
- Q.4 (a)** Discuss UART in detail. **07**
- (b)** Discuss desirable Software Aspects of Embedded systems. **07**
- OR**
- Q.4 (a)** Discuss Embedded system Operating System environment with all necessary constituents. **07**
- (b)** What is Signal Conditioning? What are the features of it? Discuss its implementation using an example. **07**
- Q.5 (a)** Explain Design Productivity Gap with an Example by proving that “More designers do not increase productivity.” **07**
- (b)** Answer the following questions.
1. Write a note on USB. **03**
 2. Write a brief note on Modern Serial Interface Standards. **04**

OR

- Q.5 (a)** Answer the following questions.
1. Write a note on 8051 register banks and stack. **04**
 2. Explain 8051 flag bits and PSW register. **03**
- (b)** Answer the following questions.
3. Write a note on 8051 microcontroller. **05**
 4. Write a note on SPI. **02**
