

GUJARAT TECHNOLOGICAL UNIVERSITY**M.E –IIst SEMESTER–EXAMINATION – JULY- 2012****Subject code: 1720107****Date: 12/07/2012****Subject Name: Embedded System****Time: 10:30 am – 13:00 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. **07**
1. Define Tightly coupled Embedded Systems.
 2. Define H/W – S/W Co-design.
 3. Differentiate between Baud rate and Bit rate.
 4. What is Princeton Architecture?
 5. Define basic function of Stepper Motor.
 6. What is Composing Memory?
 7. Give memory hierarchy in brief.
- (b)** Answer the following questions.
1. Describe Cache mapping techniques. **04**
 2. Write a note on I²C. **03**
- Q.2 (a)** Explain all types of IC technology w.r.to Embedded system evolution. **07**
- (b)** Answer the following questions. **04**
1. Describe ‘pipelining’ with instruction execution stages as an example.
 2. Explain Reaction Timer with an application. **03**
- OR**
- (b)** Describe Arbitration in detail and explain all its types. **07**
- Q.3 (a)** Write a note on all types of RT-level Combinational & RT-level Sequential components. **07**
- (b)** Describe Arbitration in detail and explain all its types. **07**
- OR**
- Q.3 (a)** Answer the following questions.
1. What is a Design Metrics? List all design metric parameters. **04**
 2. Write a note on LCD controller. **03**
- (b)** Write a note on all types of Advanced RAMs. **07**
- Q.4 (a)** Explain Functional and non-functional requirement specification for Digital Camera example. **07**
- (b)** Answer the following questions.
1. List Addressing Modes and explain their execution types. **05**
 2. Write in brief Real Time clock. **02**
- OR**
- Q.4 (a)** Answer the following questions.
1. What are ASIPs? Explain their types. **04**
 2. Explain Range and Resolution with an appropriate example. **03**
- Q.4 (b)** What are the uses of Watchdog timer? Give example of ATM time out using Watchdog timer? **07**
- Q.5 (a)** Explain Design Productivity Gap with an Example by proving that “More designers do not increase productivity.” **07**
- (b)** Explain Basic Architecture components of General Purpose Processor. **07**
- 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.
1. Write a note on 8051 microcontroller. **05**
 2. Write a note on Firewire. **02**
