

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII • EXAMINATION – WINTER • 2014

Subject Code: 170705

Date: 29-11-2014

Subject Name: Embedded Technology

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)** Explain how the embedded system is implemented using various software development tools? **07**
- (b)** Write short note on any one of the applications of embedded system. **07**
- Q.2 (a)** What is difference between RISC and CISC processors? Explain architecture of RISC processor. **07**
- (b)** Explain various design process steps in any embedded system. **07**
- OR**
- (b)** Discuss challenges and issues related to Embedded Software Development. **07**
- Q.3 (a)** What is UML? Explain various features of UML which are helpful in embedded system design. **07**
- (b)** What is the difference between DFG and CDFG model? Discuss their role in an embedded system design. **07**
- OR**
- Q.3 (a)** What is Process synchronization? Explain how it is correlated with critical section. **07**
- (b)** What are the requirements of mutual exclusion? **07**
- Q.4 (a)** What is semaphore? What are different types of semaphore used for inter-process communication? **07**
- (b)** What is scheduling? Discuss various types of scheduling algorithm in brief. **07**
- OR**
- Q.4 (a)** What is Gadget bus waiting and blind count synchronization? **07**
- (b)** Explain the concept of Process, thread and task in detail. **07**
- Q.5 (a)** What is Real-time operating system? How it is different from general purpose OS? **07**
- (b)** What is Host and Target system? Discuss steps in transferring embedded system software into target system. **07**
- OR**
- Q.5 (a)** What are different inter-process communication mechanisms? Explain any two of them in detail. **07**
- (b)** Write detailed case study about digital camera as an embedded system. **07**
