

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII EXAMINATION – WINTER 2015

Subject Code: 170705

Date: 04/12/2015

Subject Name: Embedded Technology

Time: 10:30am to 1:00pm

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 system? Explain its Characteristics and application? **07**
(b) Explain various design process steps in any embedded system. **07**
- Q.2** (a) Explain interfacing of analog to digital convertor with 8051 microcontroller. Discuss steps for programming. **07**
(b) What is scheduling? Discuss different types of scheduling algorithms in brief? **07**
- OR**
- (b) What is real time operating system? Discuss difference between real time operating system and general purpose operating system. **07**
- Q.3** (a) Compare preemptive and round robin scheduling strategies? **07**
(b) What is semaphore? What are the different types of semaphore used for inter-process communication? Explain any one with example? **07**
- OR**
- Q.3** (a) Explain interfacing of matrix keyboard with embedded processor. Also write programming steps. **07**
(b) Explain role of assemblers, compilers, and linkers in IDE? What is preprocessor? **07**
- Q.4** (a) What is a Watchdog timer and why it is used? Which are the steps to connect with microcontroller? **07**
(b) What is Gadget bus waiting and blind count synchronization? **07**
- OR**
- Q.4** (a) How does memory allocation differ in RTOS and OS? What is memory locking? **07**
(b) What is SoC? "SoC is a design innovation". Justify the statement? **07**
- Q.5** (a) What is RISC? Compare RISC and CISC processor? **07**
(b) Write a short note on RTLinux? **07**
- OR**
- Q.5** (a) Discuss the case study on digital camera as an embedded system? **07**
(b) What is network router and what its application in embedded system? **07**
