

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-VII • EXAMINATION – SUMMER • 2015

Subject Code: 170705

Date: 06/05/2015

Subject Name: Embedded Technology

Time: 02.30pm-05.00pm

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 design metric? List and explain all design metric parameters for embedded system. **07**
(b) What is the difference between Data Flow Graph and Control Flow Graph model? Explain their significance in embedded system design. **07**
- Q.2** (a) What are the criteria by which appropriate programming language is chosen for embedded software for given system? **07**
(b) What are the advantages and disadvantages of writing embedded software in C language compared to assembly language? What are the situation in which programming in assembly language is necessary or appropriate. **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) Discuss the role of RTOS in interrupt handling and task scheduling? **07**
(b) How infinite loop used in embedded system software? What are the advantages of re-entrant function in embedded system software? **07**
- OR**
- Q.3** (a) Explain internet-enabled embedded system? What type of protocol is used in internet-enabled embedded system? **07**
(b) Explain role of assemblers, compilers, and linkers in IDE? What is preprocessor? **07**
- Q.4** (a) What is the difference between RISC and CISC processor? Explain the architecture of ATMEL RISC processor. **07**
(b) What is meant by pipe? How does a pipe differ from queue? **07**
- OR**
- Q.4** (a) Explain blind counting synchronization and Gadget busy waiting? **07**
(b) Explain the difference between port-based I/O and bus-based I/O? **07**
- Q.5** (a) Explain interfacing of analog to digital convertor with 8051 microcontroller. Discuss step for programming. **07**
(b) What is network router and what its application in embedded system? **07**
- OR**
- Q.5** (a) Discuss functional specification of digital camera? **07**
(b) Write short note on cache memory and explain its significance in embedded system? **07**
