

6E6025

Roll No. _____

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B.Tech. VI-Sem. (Main/Back) Exam., April/May-2016
Computer Science & Engineering
6CS5A Embedded System Design

Time: 3 Hours

Maximum Marks: 80

Min. Passing Marks (Main & Back): 26

Instructions to Candidates:-

Attempt any *five* questions, selecting *one* question from *each* unit. All Questions carry *equal* marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly.

Units of quantities used/ calculated must be stated clearly.

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. NIL _____

2. NIL _____

UNIT-I

- Q.1 (a) What is embedded system? What are the hardware needs before designing an embedded system? [8]
- (b) What is the difference between an embedded system and a general computing system? [8]

OR

- Q.1 (a) What are programmable logic devices? Also explain field programmable gate arrays and complete programmable logic devices. [8]

- (b) What are the advantages of programmable logic devices over fixed logic devices? [8]

UNIT-II

- Q.2 (a) Explain level triggered and edge triggered interrupts. Which one of these interrupts is generally recommended for interrupt signals that are very short or very long? [8]
- (b) What are interrupt service routines (ISRs) and how ISRs handle an interrupt? [8]

OR

- Q.2 (a) What is context and why context saving occurs in a multitasking system? [8]
- (b) What operations are performed by CPU for solving shared data problems? [8]

UNIT-III

- Q.3 (a) What is real time operating system? Categorize it, also write down its benefits. [8]
- (b) Describe the various states of tasks with respect to RTOS. Also explain the role of timer function in RTOS. [8]

OR

- Q.3 (a) Write short note on the following: - [8]
- (i) Scheduler
- (ii) Reentrancy.
- (b) How inter task communication process is done by mailboxes and pipes? [8]

UNIT-IV

- Q.4 (a) Briefly describe the steps involved in embedded system development. [8]
- (b) Explain the parameters of real time task. Also enlist the types of task scheduling in RTOS. [8]

OR

Q.4 (a) Write short note on the following: - [8]

(i) QNX

(ii) RT LINUX

(b) What is real time system? Differentiate hard real time system and soft real time system. [8]

UNIT-V

Q.5 (a) Explain the process of software code development in embedded system. [8]

(b) Explain the version techniques by which the code is uploaded to target board. [8]

OR

Q.5 Write short note on the followings: - [16]

(a) Logic Analyzer

(b) In circuit Emulator (ICE)

(c) Monitor

(d) Issues with traditional Emulation.
