

6E6025

Roll No. _____

Total No of Pages: 3

6E6025

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.
-