Roll No.

6E3205

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B. Tech. VI Sem. (Main & Back) Exam., May/June-2014
Computer Engineering
6CS5 Embedded System Design

Time: 3 Hours

Maximum Marks: 80
Min. Passing Marks: 24

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.

1._____Nil_____   2._____Nil_____

UNIT-I

Q.1 (a) What is an embedded system? [2]

(b) Explain briefly embedded development environment. [8]

(c) Write the difference between microprocessor and microcontroller. [6]

OR

Q.1 (a) What are the parameters of choosing a microcontroller? [8]

(b) Explain SOC in an embedded system. [8]

UNIT-II

Q.2 (a) What are different types of addressing modes in MSP430? Explain with example.

[8]

(b) Explain MSP430 interrupts and interrupt structure. [8]

OR

Q.2 Discuss following with diagram:

(i) LED, LCD interfacing [4]

(ii) Seven segment interfacing [4]

(iii) ADC interfacing [4]

(iv) DAC interfacing [4]

UNIT-III

Q.3 (a) How many registers are in ARM? Explain CPSR. [8]

(b) What is pipelining in ARM? Explain three stage pipelining. [8]

OR

Q.3 (a) Explain stack operation in ARM with stacks instructions. [8]

(b) Explain Exception and its mode in ARM. [8]

UNIT-IV

Q.4 Explain following in 8051 microcontroller:

(i) Internal architecture with diagram. [8]

(ii) Interrupt programming. [8]

OR

Q.4   Explain following in 8051 micro controller

(i)   Addressing mode with example.   [8]

(ii)   Different groups of instruction set with one instruction from each group.   [8]

UNIT-V

Q.5   Discuss in embedded system:

(i)   Energy meter   [4]

(ii)   Smoke detector   [4]

(iii)   CPU performance issue   [4]

(iv)   Program execution time analysis issue   [4]

OR

Q.5   Discuss in embedded system:

(i)   Wireless sensor network   [4]

(ii)   Data acquisition system   [4]

(iii)   CPU power consumption issue   [4]

(iv)   Low power programming's in interrupts.   [4]