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10EC74

Seventh Semester B.E. Degree Examination, July/August 2021

Embedded System Design

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

1   a. What is an embedded system and design metric?   (04 Marks)
    b. Explain with diagram how the Top-Down design process improves the productivity.
                                                                                         (08 Marks)
    c. Describe life cycle of Embedded System with a neat diagram.   (08 Marks)

2   a. Briefly explain high level block diagram of Finite State Machine.   (08 Marks)
    b. Compare RISC and CISC registers.   (04 Marks)
    c. Explain RTN model for a Microprocessor Data path and Memory Interface.   (08 Marks)

3   a. Explain Swapping and multiprogramming.   (04 Marks)
    b. Explain memory chip Internal Architecture.   (08 Marks)
    c. Write the Timing Diagram for the DRAM Read and write cycle and explain.   (08 Marks)

4   a. Draw and explain waterfall model and spiral model.   (10 Marks)
    b. Write and explain functional partition of the counter system.   (06 Marks)
    c. Explain coupling and cohesion.   (04 Marks)

5   a. Explain the single and multiple processes.   (06 Marks)
    b. Briefly explain threads.   (04 Marks)
    c. Briefly explain virtual and high level operating system architecture.   (10 Marks)

6   a. Explain in detail General Purpose Registers with four different contexts ad overlapping
        contexts.   (08 Marks)
    b. Illustrate the use of an interrupt to manage the asynchronous keyboard input.   (06 Marks)
    c. What is stack? Explain types of stack.   (06 Marks)

7   a. Discuss caches and performance.   (06 Marks)
    b. Explain Queue Based Power Management Model with diagram.   (06 Marks)
    c. Explain Bio-O notation and Big-O Arthimatic.   (08 Marks)

8   a. Describe memory loading with neat figure and equation.   (08 Marks)
    b. Write Selection Sort Algorithm.   (08 Marks)
    c. Write a note on Tricks of the Trade.   (04 Marks)

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