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10EE665

Sixth Semester B.E. Degree Examination, June/July 2019
Embedded Systems

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting atleast TWO questions from each part.*

PART – A

1   a. Define Embedded System. Explain the main components of an Embedded system. Mention the different types of Embedded system. Also give an example for each. **(10 Marks)**
    b. Describe the architectural features of 6808 micro controller, with the help of a block diagram. **(10 Marks)**

2   a. With a neat block diagram of EVB system, explain the expanded mode of operation of 6811 microcontroller. **(10 Marks)**
    b. Explain ROM variants. **(06 Marks)**
    c. Write short note on SOC. **(04 Marks)**

3   a. Explain the I/O registers used to interface analog signal to 6811 micro controllers. **(10 Marks)**
    b. Explain how a 12 bit successive approximation ADC can be implemented using software. Also give the hardware interface required for the same. **(10 Marks)**

4   a. List out the design metrics of an Embedded system. **(06 Marks)**
    b. Briefly mention about the factors and needed features to be considered in selecting the processor or controller for an Embedded system. **(04 Marks)**
    c. Explain the main design technologies. How are these helpful to designers? **(10 Marks)**

PART – B

5   a. What are the advantages of high level language 'C' over assembly language? **(10 Marks)**
    b. With the help of pseudo code, explain the round robin with interrupt architecture. Mention the advantages and disadvantages of it. **(10 Marks)**

6   a. What is a Task? Describe the states in which a task can exist. Give a block diagram showing the moving of task from one state to another. **(10 Marks)**
    b. What is a Semaphore? Discuss the problems associated with a semaphore. **(10 Marks)**

7   a. What is a Switch bounce? Discuss how a capacitor eliminates the switch bouncing when pressed and released. **(10 Marks)**
    b. Define i) Frame   ii) Simplex communication   iii) Full duplex communication   iv) Half duplex communication. **(10 Marks)**

8   a. Describe the three approaches to interfacing multiple keys to an 8 bit parallel port. **(10 Marks)**
    b. Explain the general approach to interfacing a memory to the 6811 microcontroller, with a neat block diagram. **(10 Marks)**

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