10CS72

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

Time: 3 hrs.　　　　　　　　　　　　　　　　　　　　　　　　　Max. Marks:100

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

PART – A

1　a. Define embedded computing system. Explain the embedded system design process. (10 Marks)

　　b. Explain the design process for GPS moving map. (10 Marks)

2　a. Explain the format of ARM data processing instruction. (06 Marks)
　　b. Differentiate between Von Neumann and Harvard architectures. (06 Marks)
　　c. What is interrupt? With a neat diagram, explain the interrupt mechanism. (08 Marks)

3　a. Write the requirement chart of alarm clock. (06 Marks)
　　b. Explain Bus with DMA controller. (06 Marks)
　　c. Explain:
　　　i) Cross compiler
　　　ii) Timer
　　　iii) Logic analyzer
　　　iv) Displays (08 Marks)

4　a. Explain different types of performance measures on programs. (06 Marks)
　　b. Explain program generation from compilation through loading. (06 Marks)
　　c. Explain different program optimization techniques. (08 Marks)

PART – B

5　a. Explain the structure of process. (06 Marks)
　　b. What are the factors to be considered for selection of scheduling algorithm? (06 Marks)
　　c. What is RTOS? Explain the different services of RTOS. (08 Marks)

6　a. Explain L shaped usage distribution. (06 Marks)
　　b. Explain:
　　　i) Message passing
　　　ii) Counting semaphore (06 Marks)
　　c. With a neat sketch, explain shared memory communication. (08 Marks)

7　a. With a neat diagram, explain CAN frame format. (06 Marks)
　　b. Explain the distributed embedded architecture. (06 Marks)
　　c. With a neat diagram, explain various fields of IP packet. (08 Marks)

8　a. What is monitor program based firmware debugging? (06 Marks)
　　b. Explain the different types of files generated in cross compilation. (06 Marks)
　　c. What is simulator? Explain the features, advantages and limitations of simulator based debugging. (08 Marks)

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