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10EC842

Eighth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Real time Operating Systems

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Explain briefly the real time systems with two examples. **(10 Marks)**

b. What is meant by embedded system? Explain briefly the history of embedded system. **(06 Marks)**

c. Give four examples of real-time embedded system applications. **(04 Marks)**

2 a. Differentiate between preemptive and non-preemptive scheduling. **(12 Marks)**

b. Distinguish between RM and DM policies for scheduling. **(08 Marks)**

3 a. Explain intermediate I/O and its applications. **(08 Marks)**

b. Briefly explain the interconnection networks in RTOS. **(07 Marks)**

c. Express in brief worst –case execution time with an example. **(05 Marks)**

4 a. Explain briefly pipelining technique, physical memory hierarchy and flash system. **(12 Marks)**

b. Differentiate between deadlock and live lock. **(08 Marks)**

PART – B

5 a. What is meant by priority inversion? Explain the unbounded priority inversion solutions. **(12 Marks)**

b. Explain briefly the power management and processor clock modulation. **(08 Marks)**

6 a. What is meant by missed deadlines? Explain how these missed deadlines can be handled. **(08 Marks)**

b. Explain the RTOS system software mechanisms. **(08 Marks)**

c. Explain the heap-based message queue communication between tasks in RTOS. **(04 Marks)**

7 a. Explain the single step debugging, kernel scheduler traces and application level debugging. **(12 Marks)**

b. Explain the basic concepts of drill down tuning and path length, efficiency and calling frequency. **(08 Marks)**

8 Write a short notes on :

a. ECC

b. Semaphore

c. Design trade off

d. Reliability and reliable software. **(20 Marks)**

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