USN [   ]   10EC842

Eighth Semester B.E. Degree Examination, June/July 2016
Real Time Operating Systems

Time: 3 hrs.   Max. Marks:100

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

PART – A

1   a. Explain briefly Real Time standards.   (10 Marks)
    b. Draw a polling state machine for real time services and write Pseudo code for real time services.   (10 Marks)

2   a. Describe the ix real time service utility functions with graphs and example.   (12 Marks)
    b. Write the state transition diagram and state transition table for a thread of execution including possible.   (08 Marks)

3   a. Explain two algorithms for determination of N and S feasibility testing with RM policy.
                                                                                (10 Marks)
    b. Explain liu and haypro-proposed sufficient feasibility test by taking the example of two services (RMLUB).   (10Marks)

4   a. Explain the worst-case execution time of a service.   (10 Marks)
    b. Explain the following :
       i) Shared memory   (05 Marks)
       ii) Flash file systems.   (05 Marks)

PART – B

5   a. Explain blocking, deadlock and live lock.   (10 Marks)
    b. Explain the ways of handling missed deadlines and quality of service (QOS) for a real time system.   (10 Marks)

6   a. Mention hardware components of a real time embedded systems. Explain in brief any three.
                                                                                (10 Marks)
    b. Explain with a figure any two firmware components.   (06 Marks)
    c. Mention the levels of single step debugging.   (04 Marks)

7   a. Explain hardware supported profiling and tracing.   (10 Marks)
    b. Describe the basic concept of drill down tuning.   (10 Marks)

8   a. Compare reliability and availability. Also discuss reliability with an example.   (10 Marks)
    b. Explain the features of PIC microcontrollers.   (04 Marks)
    c. What are the issues to be considered for the design of RTOS using a PIC microcontroller?
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