Seventh Semester B.Tech. Degree Examination, October 2018
(2013 Scheme)
13.705.3 : REAL TIME OPERATING SYSTEMS (T)

Time : 3 Hours
Max. Marks : 100

PART – A
Answer all questions. Each question carries 2 marks. (10×2=20 Marks)

1. Differentiate User threads from Kernel threads.
2. Define interrupt latency.
3. Define RTOS.
4. What are the problems that may arise while using semaphores?
5. What is meant by System Calls?
7. Differentiate between Periodic and Aperiodic task.
9. List the features of UNIX real time operating system.
10. Give the reasons for the Message delay in Real time communication.

PART – B
Answer any one question from each Module.

Module – I

11. a) What is meant by a Process? Explain states of process with neat sketch. 10
    b) Explain the Operating System Structure and its components. 5
    c) Discuss about dynamic linking and loading. 5

   OR

12. a) Explain Contiguous and Non-contiguous memory storage allocation schemes. 10
    b) Discuss the basic concepts of Segmentation with neat diagram. 10

P.T.O.
Module – II

13. a) How does sharing data among RTO tasks carried out? Discuss the problems associated with shared data. 10

b) Explain the need and features available for Inter process communication as adopted in the Real Time Operating System. 10

OR

14. a) Explain the classic problems of synchronization. 10

b) Explain in detail Demand Paged Memory Management with its advantages and disadvantages 10

Module – III

15. a) Describe about the Message queues used RTOS. 10

b) Check whether the EDD algorithm produces a feasible schedule for the following task set (all tasks are synchronous and start at time t = 0). 10

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OR

16. a) Compare EDD and EDF algorithm for aperiodic task scheduling. 5

b) Explain in detail Multiple tasks and their functions. 5

c) Verify the schedulability under EDF of the task set given and then construct the corresponding schedule. 10

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Module – IV

17. a) Explain in detail about RTOS programming tool MicroC/OS-II. 10
    b) Draw the detailed Process state transition diagram of a Periodic task and explain. 10

OR

18. a) Discuss in detail about main components of Embedded system with block diagram. 10
    b) Explain in detail about Inter task communication mechanisms. 10