



Sanjay Ghodawat University, Kolhapur

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2018-19

EXM/P/09/01

Year and Program: 2018-19

F.Y. M. Tech.

School of Technology

Department of Electronics Engineering

Course Code: EES507

Course Title: Real Time

Semester – I

Operating Systems

Day and Date: Monday

End Semester Examination

24/12/2018

(ESE)

Time: Max Marks: 100

10 am to 1:00 pm.

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1 Attempt the following

Marks	Bloom's Level	CO
07	L ₃	CO1
07	L ₅	CO2

- a) Explain Round Robin and RTOS architecture with the pseudo code.
- b) Discuss the following techniques related to virtual memory
i. Paging ii. Swapping iii. Segmentation.

OR

- b) Discuss the use of following kernel objects with example and also explain any two OS functions related to each of these kernel objects.
i. Semaphores ii. Mailbox

Q.2 Attempt the following

07	L ₃	CO3
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- a) Explain the factors on which the Worst Case Execution Time (WCET) of a task depends.

OR

- a) Describe how the scheduling of independent tasks is achieved.
- b) What are the features of VxWorks? Explain any four task management functions.

Q.3 Attempt any two of the following

- a) Explain Function Queue Scheduling with the pseudo code.
- b) Summarize the configuration options available in RL-RTX.
- c) What is Scheduling Problem? Explain sufficient and necessary schedulability tests.

Q.4	Attempt any Two of the following			
a)	Discuss various threading issues.	09	L ₃	CO5
b)	What is a thread? What are advantages of threads. Distinguish between thread and process.	09	L ₄	CO5
c)	Explain special features for threads scheduling.	09	L ₃	CO5
Q.5	Attempt any Two of the following			
a)	Draw and explain VoIP software tasks flow in detail.	09	L ₃	CO6
b)	List different types of faults? Explain transient fault detection techniques.	09	L ₄	CO6
c)	What are multirate systems? Explain Air traffic/flight control hierarchy.	09	L ₃	CO6
Q.6	Attempt any Three of the following			
a)	List different models for organizing threads? Explain in detail.	08	L ₄	CO5
b)	Explain user-level threads, also list its advantages and disadvantages.	08	L ₄	CO5
c)	Elaborate the factors that affect the diversity of the multiple software versions?	08	L ₅	CO6
d)	Discuss the Architectural considerations in VoIP.	08	L ₃	CO6
