

Subject Code: H6803/R13

M. Tech –II Semester Regular/ Supply Examinations, October, 2015

EMBEDDED REAL TIME OPERATING SYSTEMS

**(Common to VLSI&ES, ES&VLSI, VLSID& ES, ES&VLSID, DECS, E&CE
and DECE)**

Time: 3 Hours

Max Marks: 60

Answer any FIVE questions

All questions carry EQUAL marks

1. a) Why does an OS function provide two modes, user mode and supervisory mode?
Briefly explain about those two modes?
b) What is the protection mechanism for the OS? Give the various activities for implementing important security functions?
2. a) Explain the terms process descriptor and process control block. What are the analogies in a PCB and TCB?
b) Briefly explain about the Round Robin Time Slicing Scheduling?
3. a) How does a mailbox message differ from a queue message? Explain the queue functions for the intertask communications?
b) What is RTOS? Explain the different types of RTOSes?
4. a) Classify and list the source files, which depend on the processor and those that are processor independent?
b) Describe the features of Windows CE. Why does the Windows CE have low interrupt latencies?
5. a) Briefly explain about the software layers in software architecture of a camera system?
b) Draw the state diagram of digital camera functions?
6. a) With suitable diagrams explain TCP stack hardware and software architecture?
b) Tabulate the features needed in the OS for a smart card?
7. a) Write a shell script to find single letter, two letter and three letter words in a text file?
b) List the function calls used for shared memory and message queues.
8. a) Explain how to achieve communication between a process running in Linux and a process running in RTLinux.
b) Explain the use of semaphore with an example.
