

PRINCE OF SONGKLA UNIVERSITY
FACULTY OF ENGINEERING

Midterm Examination : Semester II
Date : 20 December 2006
Subject : 217-452 Real-time Software

Academic Year : 2006
Time : 9.00 - 11.00
Room : A201

Attempt all questions.

1. Describe the following misconceptions about real-time computing:
 - Advances in supercomputer hardware will take care of real-time requirements. (2)
 - Real-time programming is assembly coding, priority interrupt programming, and device driver writing. (3)
2. Answer the following questions:
 - What are embedded real-time systems? (1)
 - Give ~~two~~ (2) examples of embedded real-time systems. (2)
 - Give two (2) embedded real-time system characteristics. (2)
3. Describe the following terms, in your own words, related to uC/OS.
 - real-time, deterministic performance (1)
 - small, scalable memory footprint (1)
 - highly portable (1)
 - high reliability (1)
 - low Interrupt latency (1)
- 4.1 Describe the concept of mailbox in uC/OS. (1)
- 4.2 Write the sample application in C using mailbox in uC/OS. (4)
- 5.1 Describe the concept of semaphore in uC/OS. (1)
- 5.2 Write the sample application in C using semaphore in uC/OS. (4)

K. Thongnoo