

Institute of Business Administration
MIS & CS Department
Operating Systems, Fall Semester 2003
BCS IV
Second Hourly Test
October 2, 2003

Time Allowed: One Hour

Total Marks: 100

Instructions

- a. Attempt all questions.
 - b. Maximum/Total Marks are 100.
 - c. Time allowed is 1 hour.
 - d. Do NOT write any thing on the Question Paper except your name. Provide your answers on the answer sheet provided for this purpose.
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Question 1: State whether True (T) or False(F) (40 Marks)

1. The UNIX SVR4 Zombie process state means that the process is awaiting an event and has been swapped to secondary storage.
2. UNIX is unsuitable for real-time applications because it has a monolithic kernel.
3. In multi-threading operating system kernels, the unit of dispatching is a thread.
4. A thread on a multi-threading operating system can continue to run once the process that created it has died.
5. Thread operation latencies in Kernel-Level Threads are higher than User Level Threads.
6. In a multiprocessor system where each processor has its own local cache, the *cache coherence* problem is typically addressed by the operating system rather than by the hardware.
7. The enforcement of mutual exclusion may create deadlock or starvation.
8. SMP is a type of SIMD parallel processing.
9. If a process is swapped out, all of its threads will also be swapped out.
10. Linux is a micro-kernel based implementation of a UNIX operating system.

Question 2: (15 Marks)

List (only list) the five activities related to process management that an operating system has to perform.

Question 3: (15 Marks)

List and briefly explain 3 advantages and 2 disadvantages of User Level Threads.

Question 4: (15 Marks)

In no more than one page describe the final version of Dekker's Algorithm using a representation of your choice (pseudo code, text, picture, flowchart, etc.)

Question 5: (15 Marks)

For a simple five-state process model draw a Process State Transition Diagram and a Queuing Model with Multiple Blocked Queues.