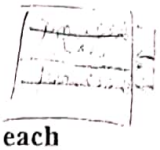
Operating Systems, First Term Exam, Chapter 1~4, Oct 31, 2003

Part I. Please write down the full name of the following terminology. (10%)

1. SMP, 2. SYSGEN, 3. IPC, 4. RPC, 5. API

Part II. Please explain the following terminology briefly.(20%)

1) batch system, 2. spooling, 3.throughput,
4. response time, 5. dual-mode protection, 6. bootstrap loader,
7. micro-kernel, 8. rendezvous, 9.cooperating process
10. synchronous communication



Part III. Please explain the following terminology and show an example for each of them. (40%)

1. device status table,
2. process control block,
3. storage hierarchy,
4. shard memory model,
5. virtual machine,

Part IV. Answer the following questions briefly.(30%)

1. There are a few possible ways for a user program to pass parameters to an operating system while performing a system call. Please show two of them.
2. What is 'mechanism'? What is 'policy'? Why we would separate mechanism from policy?
3. What is a context switch? When will the operating system perform a context switch?
4. Suppose that you are to design a simple operating system that has only three states, namely 'ready', 'run' and 'blocked'. Please draw the process state diagram and specify the operations that will trigger the state transitions.
5. In the Unix system, what system call you would use for 'child' process creation? How you will distinguish from a parent process to a child process?

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