世新大學九十五學年度碩士班招生考試試題題卷

系所組別	考 試 科 目
資訊管理學系電腦與通訊組	作業系統

※考生請於答案卷內作答

1. What is the main advantage of multiprogramming? (10%)
2. Describe three general methods for passing parameters to the operating system.(10%)
3. Describe the differences among shod-term, medium-tem, and long-term scheduling. (15%)
4. Consider the following set of processes, with the length of the CPU-burst time given in milliseconds. The processes are assumed to have arrived in the order P1, P2, P3, P4, P5, all at time 0. What is the average waiting time of each process for FCFS, SJF, a nonpreemptive priority(a smaller priority number implies a higher priority),and RR (quantum =1)scheduling?(15%)

Processes	CPU-burst time	Priority
P1	5	5
P2	2	1
P3	3	2
P4	1	4
P5	4	3

5. Show that, if the wait () and signal () semaphore operations are not executed atomically , then mutual exclusion may be violated.(10%)
6. What are the four necessary conditions for a deadlock to occur ? Please explain them briefly. (10%)
7. Assume that you have a mixed configuration comprising disks organized as RAID Level 1and as RAID Level 5disks.Assume that the system has flexibility in deciding which disk organization to use for storing a particular file. Which files should be stored in the RAID Level l disks and which in the RAID Level 5disks in order to optimize performance? (10%)
8. What is the purpose of using a ”salt” along with the user-provided password ?Where should the “ salt" be stored, and how should it be used?(10%)
9. Compare symmetric and asymmetric encryption schemes, and discuss under what circumstances a distributed system would use one or the other. (10%)