

# 淡江大學 100 學年度碩士班招生考試試題

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系別：資訊工程學系  
資訊工程學系資訊網路與通訊碩士班

科目：作業系統

考試日期：2月28日(星期一) 第2節

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1. Give a name of the operating systems recently used in the mobile platform for each of the company below. (10%)  
(a) Google (b) Apple (c) Microsoft (d) Nokia
2. What is the direct memory access (DMA)? How can network cards benefit from the use of DMA? (10%)
3. What is the thrash? Explain why the working-set strategy prevents thrashing while keeping the degree of multiprogramming as high as possible. (10%)
4. RAID is a technology that provides increased storage functions and reliability through redundancy. Discuss differences among four different RAID levels 0, 1, 0+1, 5 in terms of  
(a) mechanisms used to increase storage and reliability through redundancy (10%)  
(b) minimum number of disks used (5%)  
(c) fault tolerance from the number of disk failures (5%)
5. Consider the five CPU scheduling algorithms below, fill in each cell a value from the set {low, medium, high}. (20%)

Scheduling algorithm	CPU Utilization	Throughput	Turnaround time	Response time
First In First Out				
Shortest Job First				
Priority based scheduling				
Round-robin scheduling				
Multilevel Queue scheduling				

6. Illustrate the external fragmentation problem by two cases. For each case, discuss an approach to solve the problem. (10%)
7. Show the seven layers of OSI model. Associate each of the following protocols TCP, IP, HTTP, ARP, SSL into its corresponding layer. (10%)
8. Give a cloud computing architecture. Discuss and compare it to that of the client-server computing. (10%)