

東吳大學 100 學年度碩士班研究生招生考試試題

第 1 頁，共 2 頁

系級	資訊管理學系碩士班	考試時間	100 分鐘
科目	計算機概論	本科總分	100 分

1. 從技術、管理、策略角度分別說明台灣 B2C 電子商務購物網站的現況 15%
2. 為提升系統委外開發的執行效果，說明資訊系統委外開發時應注意的事項 15%
3. 說明如何利用資訊技術加強與顧客的關係 10%
4. 說明長鞭效應 (Bullwhip Effect)，以及如何減少長鞭效應 10%
5. Programs **A** and **B** are analyzed and found to have worst-case running times no greater than $15n \log_2 n$ and n^2 , respectively. Answer the following questions. 6%
 - (a) Which program has the better guarantee on the running time, for large values of n (e.g. $n > 10,000$)?
 - (b) Which program has the better guarantee on the running time, for small values of n (e.g. $n < 100$)?
 - (c) Which program will run faster on average?
6. For each of the following program fragments, give an analysis of the running time (Big-Oh will do). 4%
 - (a)

```
Sum=0;
for ( i=0 ; i<n ; i++ )
    Sum++;
```
 - (b)

```
Sum=0;
for ( i=0 ; i<n ; i++ )
    for ( j=0 ; j<5 ; j++ )
        Sum++;
```
7. What would be the contents of queue Q after the following code is executed and the following data are entered? The data are: 5, 7, 12, 0, 4, 6, 23, 5, 0, 44, 33, 6, 0, -1 4%

```

Q = CreateQueue();
S = CreateStack();
scanf("%d",&num);    /* read a number */
While (num != -1)    /* != denotes not equal to */
{ if (num !=0)
    PushStack(S, num);
  else
    { PopStack(S, &x);
      PopStack(S, &x);
    }
  scanf("%d",&num);
}
while( ! EmptyStack(S) )
{ Popstack(S, &x);
  Insertqueue(Q, x);
}
    
```

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第 2 頁，共 2 頁

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8. A machine has 48-bit logical address and 32-bits physical address. Page size is 2K. How many entries are needed for a page table? 4%
9. Assuming a physical memory of four page frames, give the number of page faults for the reference string *abgadeabadegde* for each of the following page replacement policies. (Initially, all frames are empty.) 6%
- (a) FIFO
 (b) Optimal algorithm
 (c) LRU

10. Fill in the following blank with a proper statement. 6%

Infix	Postfix	prefix
$a*b*c$	(a)	(b)
(c)	(d)	$+/c*abd$
(e)	$ab*5+$	(f)

11. The Fibonacci numbers are defined as: $f_0 = 0, f_1 = 1$, and $f_i = f_{i-1} + f_{i-2}$, for $i > 1$. Write a function in C (or Java) language to compute f_i . 10%
12. Let arrays A and B hold m and n sorted numbers, respectively. Write a subroutine merge(A, B, O, m, n) in C (or Java) language, which merges the numbers in A and B and produce a sorted array in O. 10%