

國立臺北科技大學

九十三學年度電機工程系碩士班碩士在職專班入學考試

戊組：計算機概論(含專業實務) 試題

填准考證號碼

第一頁 共一頁

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注意事項：

1. 本試題共【10】題，配分共 100 分。
2. 請按順序標明題號作答，不必抄題。
3. 全部答案均須答在試卷答案欄內，否則不予計分。

1. Convert each of the following binary representations into its equivalent base ten form:
 (a) (2%) 10101 (b) (3%) 110.101
2. Convert each of the following decimal representations to its equivalent binary form:
 (a) (2%) 35 (b) (3%) 5.75
3. (10%) What are some differences between a transport layer based on the TCP protocol and another based on the UDP protocol?
4. (10%) List three necessary conditions for the occurrence of deadlock in an operation system.
5. (10%) What sequence of numbers is printed by the following algorithm if it is started with input values 2 and 1?

```

pocedure MysteryWrite(Last, Current)
if (Current < 100)
    then ( print the value assigned to Current;
           assign Temp the value of Current + Last;
           apply MysteryWrite to the values Current and Temp)
            
```

6. (10%) Summarize the following routine with a single if-then-else statement:

```
    if  $X > 10$  goto L1
     $X = X + Y$ 
    goto L2
L1:   $X = X - Y$ 
L2:  stop
```

7. (10%) Let A be a 2-dimensional array $A(m,n)$ and each element occupy one address. If the location of $A(3,2)$ is 810 and $A(2,3)$ is 815, then what is the location of $A(1,5)$.

8. (10%) Design an algorithm for concatenating two linked lists (that is, placing one before the other to form a single list).

9. In term of the following relations, what is the appearance of the relation *RESULT* after executing each of these instructions:

X relation		
<i>A</i>	<i>B</i>	<i>C</i>
a	k	3
b	j	5
c	h	7

Y relation	
<i>D</i>	<i>E</i>
7	b
8	c

(a) (5%) $RESULT \leftarrow \text{PROJECT } B \text{ from } X$

(b) (5%) $RESULT \leftarrow \text{SELECT from } X \text{ where } C=3$

(c) (5%) $RESULT \leftarrow \text{JOIN } X \text{ and } Y \text{ where } C=D$

10. Explain the following terms:

(a) (5%) SQL

(b) (5%) NP problem

(c) (5%) Prolog