

國立臺北商業技術學院 98 學年度研究所碩士班考試入學試題

准考證號碼：□□□□□□ (請考生自行填寫)

資訊研究所

筆試科目：計算機概論

共 2 頁，第 1 頁

注意事項	1. 本科目合計 100 分，答錯不倒扣。 2. 請於答案卷上依序作答，並標註清楚題號 (含小題)。 3. 考完請將答案卷及試題一併繳回。
------	---

1. Order the following functions by growth rate:

$N, \sqrt{N}, N^{1.5}, N^2, N \log N, N \log \log N, N \log^2 N, N \log(N^2), 2^N, N^2 \log N, N^3$

Indicate which functions grow at the same rate. (5%)

2. Show the result of inserting 2, 1, 4, 5, 9, 3, 6, 7 into an initially empty

(a) binary search tree and (5%)

(b) AVL tree. (5%)

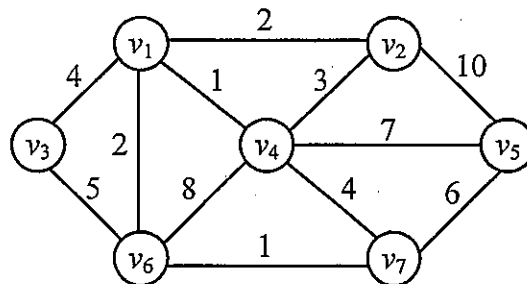
3. (a) List all binary trees for three elements A,B and C. (5%)

(b) What is the minimum height of the binary trees for n elements? (5%)

4. A weighted graph is shown below.

(a) Find a minimum spanning tree and its weight. (3%)

(b) Is this minimum spanning tree unique? (2%)



5. Please explain the followings: (10%)

(a) DNS server

(b) DHCP

(c) CAMA/CD

(d) ARP/RARP

(e) ICMP

6. Write down the layers of OSI model and TCP/IP? (5%)

7. What is the difference between TCP and UDP Protocol? (5%)

背面尚有試題

國立臺北商業技術學院 98 學年度研究所碩士班考試入學試題

准考證號碼：□□□□□□ (請考生自行填寫)

資訊研究所

筆試科目：計算機概論

共 2 頁，第 2 頁

8. Using this network ID 192.168.128.0 and assume that you need 4 subnets. (Please list the IP range, the network address, and the network broadcast IP for each subnet.) (5%)
9. What is the result of the AND boolean operation between address 192.168.209.83 and mask 255.255.255.192? (5%)
10. (15%)
A database contains three tables of customer, deposit, and branch. Those tables are as follows:
Customer = (account-no*, customer-name, street, city)
Deposit = (branch-no*, account-no*, balance)
Branch = (branch-no*, branch-name, city)
(* denotes the primary key)
Write down the SQL statements for the following.
- (1) Fetch all the customers whose balance are greater than or equal to 50000.
** Output the customers' account-no and customer-name.
 - (2) Compute total balance for each of the branches.
** Output every branch's branch-no and its total balance.
 - (3) Fetch all the customers (account-no, customer-name) having deposit in the branch located at the city of "Taipei".
** Output the customers' account-no and customer-name.
11. (15%)
- (1) Construct a B+-tree for the following set of key values:
(2, 3, 5, 7, 11, 17, 19, 23, 29, 31).
Suppose every node in the B+-tree holds up to two keys.
 - (2) Give the resultant B+-tree if we delete 19 and 23 from that of (1).
 - (3) Give the resultant B+-tree if we add 8 and 10 to that of (2).
12. (10%)
- (1) Explain the purpose of the checkpoint mechanism.
 - (2) Explain the recovery procedure that need to take place after a disk crash.

試題結束