NTIT 國立臺中技術學院　　系所組：資訊科技與應用研究所 准考證號碼：

95 學年度碩士班考試入學暨碩士在職專班試題　　科目：專業科目

注意事項：

1.本科目考試時間共 90 分鐘。

2.答案卷書寫題號依序作答，不必抄題。

3.答案卷不可書寫任何可辨別個人姓名或特殊標記，違反者以零分計算。

4.請於試題紙上填寫准考證號，繳卷時「試題」、「答案卷」一併繳回。

1. What is a deadlock, and how can it be avoided? Discuss several deadlock-avoidance strategies.

2. What three languages were adopted by the DBTG to standardize the basic network data model, and why was such standardization important to users and designers?

3. It is assumed that we have the following key values in sequence: 30, 22, 18, 31, 25, 5, 10. Write out the max heap after each value is inserted into the heap.

4. List the five layers of the TCP/IP layering model and briefly describe the functions of each layer.

5. What are the differences between TCP and UDP protocols? Give at least one example application for each protocol.

6. A CPU-scheduling algorithm determines an order for the execution of its scheduled processes. Given n processes to be scheduled on one processor, how many different schedules are possible? Give a formula in terms of n.

7. Explain the concept of transaction atomicity.

8. What is the main advantage of using protocol ports instead of process identifier to specify the destination within a machine?

9. Explain the I/O-buffering types that are supported by ISO-Cs standard I/O library.

10. Use Huffman's algorithm to construct an optimal binary code for the following table.

Letter:	A	B	I	M	S	X	Z
Frequency :	12	7	18	10	9	5	2