

題號： 427 國立臺灣大學108學年度碩士班招生考試試題
科目：計算機概論(B)
節次： 7

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1. (44%, 2 points for each problem) Please define the following terms and explain the content, purpose, and application of each term and give an illustrative example if possible. If possible, define the term in mathematical equation. If it is an acronym, please write the full name. For example:

CD-ROM: Compact Disk-Read Only Memory: the most common type of optical storage medium; data is written in a series of lands and pits on the surface of a disk, which can be read by a laser in a CD-ROM drive; stores approximately 650 MB but cannot be altered.

(1) NFC: Near Field Communication (2) virtual memory (3) semaphore (4) multi-threading (5) DMA: Direct Memory Access (6) deep learning (7) artificial intelligence (8) convolutional neural network (9) CPU (10) GPU (11) USB (12) solid-state drive (13) hard real-time system (14) SSL: Secure Socket Layer (15) Trojan Horse virus (16) Bitcoin (17) block chain (18) FinTech (19) spam (20) encryption (21) JPEG (22) streaming video

2. (8%) Please explain in detail the four necessary conditions of deadlock.

3. (8%) Please list at least four operating system functions.

4. (4%) Please explain the difference between call by value and call by address.

5. (10%) Please explain the five phases of software life cycle.

6. (8%) Please explain at least four types of network topology.

7. (4%) Please write $9 \frac{3}{8}$ in binary representation.

8. (8%) Please write the output of stack: push(9), push(7), push(6), pop(), pop(), push(5), pop(), push(4), pop(), pop().

9. (6%) What are the computational complexities for binary search, quick sort, bubble sort for n items.

試題隨卷繳回