東吳大學 112 學年度碩士班研究生招生考試試題

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

※一律作答於答案卷上(題上作答不予計分)；並務必標明題號，依序作答。

一、選擇題(每題 4 分，共 40 分)

1. The program written by the programmer with high level language is called:
   A. Object Code B. Syntax C. Source Code D. Runtime Library
2. Interrupts are sent by _____ and received by _____
   A. CPU, I/O Devices B. I/O Devices, CPU
   C. Timer, I/O Devices D. CPU, ALU
3. Information in computer on read only memory is stored by:
   A. User B. Programmer
   C. Manufacturer D. Engineer
4. What is the name of the component that used to both read and write data
   A. ROM B. RAM
   C. Hard Drive D. Cache memory
5. An advantage of SSDs over HDDs is
   A. SSDs are cheaper per megabyte than HDDs.
   B. SSDs are more reliable than HDDs.
   C. SSDs are faster than HDDs.
   D. B and C
6. A malicious code hidden inside a seemingly harmless piece of code.
   A. Worm B. Bomb
   C. Trojan Horse D. Virus
7. An I/O system call does not include
   A. memory address. B. storage device address.
   C. CPU speed. D. whether the operation is input or output.
8. The CPU of a computer is made up of the following components:
   A. Control Unit and ALU B. Operating System and Application
   C. ROM and Main Memory D. Hard Disk and Floppy Device
9. Failed sessions allow brute-force attacks on access credentials.
   This type of attacks are done in which layer of the OSI model?
   A. Physical layer B. Data-link Layer
   C. Session layer D. Presentation layer

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10. Which of the following is an example of data-link layer vulnerability?
A. MAC Address Spoofing B. Physical Theft of Data
C. Route spoofing D. Weak or non-existent authentication

二、簡答題(共 60 分，可中文或英文作答)

1. What is the difference between Job and Process? (20%)

2. The following processes arrive for execution at the times indicated. Each process will run for the amount of time listed. In answering the questions, use nonprimitive scheduling, and base all decisions on the information you have at the time the decision must be made.
What is the average turnaround time for these processes with the FCFS scheduling algorithm? (Please write the computational reasoning method) (20%)

Process	Arrival Time	Burst Time
P1	0.0	10
P2	0.8	5
P3	1.0	1

3. A classic synchronization problem, presented by Dijkstra in 1965, is the *Dining Philosophers Problem*. In this problem, there are 5 philosophers sitting at a round table. Philosophers repeat (forever) thinking and eating. There is a single chopstick shared between each pair of philosophers. As you know, a philosopher must have two (2) chopsticks to be able to eat! Please explain in a descriptive how to let all of Philosophers eat dinner. (20%)