國立彰化師範大學 99 學年度碩士班招生考試試題

系所：數位內容科技與管理研究所　　　　　　科目：計算機概論

一. 單選題(20%，每題 2%)

1. An _____ is a system that perceives its environment, learns from it, and interacts with it intelligently.
   (A) operating system (B) artificial intelligence (C) intelligent agent (D) none of the above

2. Denial of service is a type of network attack that threatens _____.
   (A) confidentiality (B) integrity (C) availability (D) none of the above

3. A _____ is last in, first out data structure.
   (A) queue (B) stack (C) link list (D) none of the above.

4. The _____ is the heart of the UNIX system.
   (A) kernel (B) virtual memory (C) shell (D) file system

5. Which of the following is not a necessary condition for deadlock?
   (A) mutual exclusion (B) resource holding (C) preemption (D) circular waiting

6. Which of the following transport protocol is best suited for an application to establish a reliable connection between machines?
   (A) UDP (B) FTP (C) HTTP (D) TCP

7. _____ is a language for creating Web pages
   (A) C (B) XML (C) HTML (D) VBASIC

8. Today the most common topology in high-speed local-area networks is a _____.
   (A) mesh (B) bus (C) star (D) ring

9. A simple computer has a set of sixteen instructions. How many bits are needed to define the operation code of a 16-bit instruction?
   (A) 2 (B) 4 (C) 8 (D) 16

10. A computer user's representation of human being is known as _____.
    (A) bot　(B) avatar (C) character (D) none of the above

二. 寫出底下專有名詞的英文全名(20%，每題 4%)

1. JIT (in Web technology) stands for _____

2. RPG (in digital game) stands for _____

3. RFID (in short-range communication) stands for _____

4. LOD (in 3D animation) stands for _____

5. URL (in Web technology) stands for _____

三. Computation Problem (20%，每題 10%)

1. Compute A – B where A, B are stored in two's complement format. (10%)
   A=$(11011111)_2$　B=$(00010111)_2$

2. Compute the following problems. (5% each)
   (a) 1011 XOR 1001 = _____
   (b) x012C + x0E48 = _____

四. 問答題(40%)

1. To write an IPC (Inter-process Communication) application such as client and server program. A client needs two information of the server for communication: _____ address and _____ number.（5%）

2. One interesting feature of Java is support for multi-threading. What is multi-thread? Write down an example of applications that utilized multithreading features. (10%)

3. Three principles were used in the design of the C++ language: encapsulation, inheritance, and polymorphism. For each principle, explain what it means. (15%)

4. Following is the graph of the maze with point A and T as starting and finishing points respectively. Draw (complete) the corresponding tree representation of the graph. (10%)