

# 國立彰化師範大學 100 學年度碩士班招生考試試題

系所：資訊管理學系

科目：計算機概論

☆☆請在答案紙上作答☆☆

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## 一. 單選題(50%，每題 5%)

1. The \_\_\_\_\_ property enables a system to continue operating properly in the event of the component failure. (A) scalability (B) interoperability (C) availability (D) expandability (E) fault-tolerance
2. A \_\_\_\_\_ system consists of multiple autonomous computers communicating through a network and interacting with each other to achieve a common goal. (A) distributed (B) networked (C) centralized (D) P2P (E) hierarchical
3. A data warehouse consists of the following four main characteristics: Subject-oriented, Integrated, Time-variant and \_\_\_\_\_. (A) Function-oriented (B) Object-oriented (C) Data-centric (D) Transaction-oriented (E) Non-volatile
4. Which of the following languages does not use **pointer** construct? (A) Java (B) C (C) C++ (D) Pascal (E) none of the above.
5. Several modern runtime environments such as Microsoft's .NET Framework and most implementations of Java use \_\_\_\_\_ to improve code execution. (A) direct interpretation (B) static translation (C) just-in-time compilation (D) dynamic linking (E) lazy translation.
6. Which of the server-side language does not offer portability? (A) JSP (B) ASP (C) PHP (D) all of the above (E) none of the above.
7. \_\_\_\_\_ is a mechanism that when a method is invoked on an object, the object itself determines what code gets executed by looking up the method at run time in a table associated with the object. (A) Encapsulation (B) Dynamic dispatch (C) Inheritance (D) Recursion (E) Abstraction
8. With the help of the firmware and \_\_\_\_\_, the operating system provides the most basic level of control over all of the computer's hardware devices. (A) application programs (B) network software (C) BIOS (D) device drivers (E) database software
9. \_\_\_\_\_ uses demand paging or demand segmentation technique to run a program that is not entirely in main memory. (A) Multi-tasking (B) Bootstrap (C) Virtual Memory (D) DMA (E) Threading
10. \_\_\_\_\_ refers to applications and services offered over the internet where services are from data centers all over the world. (A) ERP (B) E-Commerce (C) Web Computing (D) Cloud Computing (E) Client/Server Computing

## 二. 寫出底下專有名詞的英文全名(25%，每題 5%)

1. B2C (in E-commerce) stands for \_\_\_\_\_
2. XHTML (in Web Technology) stands for \_\_\_\_\_
3. OOPL (in Programming Language) stands for \_\_\_\_\_
4. P2P (in Network) stands for \_\_\_\_\_
5. OLTP (in Database) stands for \_\_\_\_\_

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## 三. 簡答題 (25%)

(1) (9%) Finish the following **recursive** method (function) **sum** according to the program specification.

```
public class FunnyMath {  
    // the method sum computes the sum of all digits of a positive integer n  
    // for example, sum(23) returns 5 and sum(1234) returns 10.  
    public static int sum(int n){ // assume n is positive integer  
        if(n < 10){  
            return _____;  
        }  
        return _____ + _____;  
    }  
    public static void main(String[] args) {  
        Date d = new Date();  
        System.out.println(FunnyMath.sum(54321)); // print out 15  
    }  
}
```

(2) (10%) Describe the differences between a P2P system and a centralized system according to the following problems.

(a) Draw diagrams and give descriptions for each of them

(b) Compare the advantages and disadvantages of them

(3) (6%) Explain

(a) What is a data warehouse?

(b) What is the purpose of using a data warehouse in an enterprise?