

國立屏東商業技術學院九十二學年度碩士班入學考試試題

資訊管理系(所) <一般生甲組>

計算機概論(含 MIS)

注意：

- 1.本試題共有二大題。第一大題為 35 題選擇題，第二大題為問答題。請依序並標明題號作答於答案卷上。
- 2.選擇題每題均有四個選項，均為單選題，請依題意選出最適當的答案。
- 3.單選題答對每題給 2 分，答錯、答案不完整或未答者給零分，不倒扣。
- 4.試題須隨答案卷一併繳回。

一、單選題 (70 %)

- 1.目前電子商務中，SET (Secure Electronic Transaction)是由 VISA/ MasterCard 等組織所開發，請問其數位簽名是利用何種密碼技術？
 - (A)對稱密碼系統 RSA
 - (B)對稱密碼系統 DES
 - (C)非對稱密碼系統 RSA
 - (D)非對稱密碼系統 DES
- 2.有關軟體品質以下敘述何者有誤？
 - (A)CMM/CMMi 是一種衡量軟體成熟度的模式，中國大陸及印度都到達最高層級第 5 級
 - (B)軟體品質是整個專案開發過程都需重視的課題
 - (C)爲了減少程式的錯誤，程式設計師可以使用一些錯誤偵測的技巧來避免，例如在 C/C++中可以使用 assert 巨集
 - (D)由於軟體的特性，專案前期(如需求、系統分析/設計等階段)的錯誤較難找出
- 3.有關 TCP 的描述何者有誤？
 - (A)屬於 circuit switching，是一種連結式的通訊協定
 - (B)會進行資料確認與重送，因此速度較 UDP 慢
 - (C)滑動窗口(sliding window)的技術是用於減少浪費在等待確認(ACK)的封包
 - (D)傳送方與接收方可同時使用各自的滑動窗口

4. 以下敘述何者有誤？

- (A) Java 語言中不使用指標，因此此語言較不易出錯
- (B) 由於不使用指標，Java 是由 call by address 來傳遞參數
- (C) 雖然不使用指標，Java 仍可實現鏈結串列(link list)
- (D) 雖然系統會自動去做記憶體管理，但 Java 語言中仍有釋放資源的語法

5. 以下有關 ASP、VBScript、JavaScript 的描述何者有誤？

- (A) VBScript 及 JavaScript 是 Script 語言，但 ASP 不是
- (B) ASP 與 VBScript 及 JavaScript 都相容
- (C) ASP 可透過 ODBC 與資料庫溝通
- (D) 提供 ASP 網頁的主機較提供 VBScript 及 JavaScript 上機的負荷重。

6. 以下有關 ActiveX 的描述何者有誤？

- (A) 是 Microsoft 提出的技術，屬於 COM 的一種
- (B) 與 Java Applet 有相同目的，即擴充網頁的處理能力
- (C) ActiveX 及 Java Applet 都是在 client 端執行，因此可降低 server 端的負載
- (D) 使用 IE 瀏覽器時，欲執行 ActiveX form 或 Java Applet 都需將安全等級降低才能執行

7. Consider the following code segment:

```

s = 0 ;
for(i = 0; i < (n-1); i++)
    for(j = i + 1; j < n; j++)
        s = s + 1 ;

```

s = ?

- (A) $n(n+1)$ (B) $n(n+1)/2$ (C) $n(n-1)/2$ (D) $n^2/2$

8. Consider a demand-paging system with the following time-measured utilizations:

CPU utilization	20%
Paging disk	97.7%
Other I/O devices	5%

Which of the following will improve CPU utilization?

- (A) Install a faster CPU
- (B) Increase the degree of multiprogramming
- (C) Decrease the degree of multiprogramming
- (D) Decrease the page size

9. Consider the following page-reference string:

7,0,1,2,0,3,0,4,2,3,0,3,2,1,2,0,1,7,0,1

How many page faults occur for the LRU (least recently used) replacement algorithm with three page frames?

(A) 13 (B) 12 (C) 11 (D) 10

10. Suppose that the following processes arrive for execution at the times indicated.

Process	Arrival Time	Burst Time
P_1	0	8
P_2	1	4
P_3	2	9
P_4	3	5

What is the average waiting time for these processes with the non-preemptive Shortest-Job-First (SJF) scheduling algorithm?

(A) 6.5 (B) 7.25 (C) 6.85 (D) 7.75

11. Let $T(1) = 1$, $T(n) = 2T(n-1) + 1$ and $T(n) = O(g(n))$, $g(n) = ?$

(A) n^2 (B) 2^n (C) $n \log n$ (D) n

12. In a full binary tree T with n levels, how many paths are there from the root to the terminal nodes? Note that if $n = 1$ then T consists of the root and two terminal nodes.

(A) 2^n (B) n^2 (C) n (D) $n + 1$

13. A virtual LAN (VLAN) is a grouping of network devices that is not restricted to a physical segment or switch. Which of the following is **not** the benefit provided by VLAN?

- (A) Easier to add and move stations on the LAN
- (B) Easier to reconfigure the LAN
- (C) Better traffic control
- (D) Increasing network complexity

14. A router is used to connect networks with

- (A) Different addressing schemes
- (B) Different packet sizes
- (C) Different interfaces
- (D) All of the above

15. All of the following are applications for wireless LANs **except**
- (A) Extension of network
 - (B) Building interconnection
 - (C) Nomadic access
 - (D) Point to point backbone connections
16. _____ is any of several classes of software that allow an application to interoperate with other software without requiring the user to understand all software involved.
- (A) Interface managers
 - (B) MPP
 - (C) Middleware
 - (D) User interface enhancers
17. Which of the following is anomaly that can be caused by redundancies in tables?
- (A) Insertion
 - (B) Modification
 - (C) Deletion
 - (D) All of the above
18. A rule that states that either each foreign key value must match a primary key value in the other relation is called the a(n)
- (A) Entity key group rule.
 - (B) Key match rule.
 - (C) Referential integrity constraint.
 - (D) Foreign/primary match rule
19. The packet-forwarding decision of switch is based on the destination MAC address of packet. Which of the following is **not** the switching method?
- (A) Cut-through
 - (B) Store-and-forward
 - (C) Fragment
 - (D) Adaptive cut-through
20. A late collision occurs when two stations transmit more 64 bytes of their data frames without detecting a collision. Which of the following could cause late collision?
- (A) Too many repeaters on the network
 - (B) Too many populated segments
 - (C) Exceeding maximum cable length
 - (D) All of the above

21. Functional specification include requirements for system input, output, and
- (A) Tuning
 - (B) Processing
 - (C) Benefits
 - (D) Feedback
22. High levels of RAID spread data across several disks, a method called
- (A) Mirroring
 - (B) Hashing
 - (C) Data striping
 - (D) Duplicating
23. In network, ISP stands for
- (A) Internet serial port
 - (B) Internet switching protocol
 - (C) Internet service provider
 - (D) Internet relay chat
24. Which of the following is **not** true of object-oriented database?
- (A) It is the most common type of database in use today
 - (B) It supports complex data type such as audio and video
 - (C) It works well with a very large amount of data
 - (D) Some of their features have been incorporated into relational databases
25. The process of allocating main memory to program and keeping the programs in memory separate from one another is called
- (A) Memory protection
 - (B) Virtual storage
 - (C) Memory management
 - (D) Real storage
26. Which of the following is **not** ideally a characteristic of a digital cash system?
- (A) Security
 - (B) Privacy
 - (C) Non-transferability
 - (D) Divisibility

27. Which of the following is an advantage of a web/database system?
- (A)Rapid Development
 - (B)Improved Functionality
 - (C)Transaction Tracking
 - (D)All of the above
28. Which of the following is **not** a class of client/server processing?
- (A)Server-based processing
 - (B)Client-based processing
 - (C)Cooperative processing
 - (D)None of the above
29. Which of the following is **not** true?
- (A)Most client/server environments emphasize the use of a GUI.
 - (B)Middleware is used to overcome lack of standardization.
 - (C)A server-based processing model uses a fat server rather than a fat client.
 - (D)Traditional client/server architecture is also called 3-tier architecture.
30. Single mail system is characterized by
- (A)a single mailbox used by all users
 - (B)a single computer used by all users
 - (C)a single server handing out mail for users of that system only
 - (D)all of the above
31. Which of the following is **not** the shell of Linux /UNIX?
- (A)Bourne shell
 - (B)C shell
 - (C)Korn shell
 - (D)Bill shell
32. Which of the following is **not** supported by Linux/Unix file system?
- (A)Boot block
 - (B)Super block
 - (C)i-node
 - (D)k-block

33. Which of the following factor is **not** considered by PERT (program evaluation and review technology) in Project Management?
- (A) Time
 - (B) Manpower
 - (C) Cost
 - (D) Space
34. Which of the following is the correct life cycle of RAD (Rapid application development) in Software Engineering? Assume
- 1. Feasibility study
 - 2. Business study
 - 3. Design and build iteration
 - 4. Implementation
 - 5. Functional model iteration
- (A) 1-2-3-4-5
 - (B) 1-2-5-3-4
 - (C) 1-2-3-5-4
 - (D) 1-2-4-5-3
35. Which of the following is the correct developing procedure of Knowledge Management system in a corporate? Assume
- 1. Prototyping
 - 2. Enriching
 - 3. Institutionalizing
- (A) 1-2-3
 - (B) 2-1-3
 - (C) 3-1-2
 - (D) 1-3-2

二、問答題 (30 %)

1. 試觀察以下的虛擬碼，並回答下面的問題：
- (A) 程式的目的為何？ (5 %)
 - (B) 若輸入值為 4，程式的輸出結果為何？ (10 %)

```

integer amt, i, p, set(10) ← 0 //將 set 陣列清為 0
read amt //讀入 amt 值
do while (p > 9-amt)
  if (p is equal to 9) then
    print "{"
    for (i=0; i<10; i++)
      {
        if (set(i) is not equal 0) then print set(i)
        print "}"
      }
  end if
  if (set(p) < amt+p-9) then
    set(p) ← set(p)+1
    do while (p is not equal to 9)
      p ← p+1
      set(p) ← set(p-1)+1
    loop
  else
    p ← p-1
  end if
loop

```

2. Consider the Java codes shown below.

```

import java.io.*;
class File4{
  public static void main(String args[ ]){
    File ff = new File("c:\\temp","def");
    if(ff.exists()){
      System.out.println("file "+ ff + " already exists");
    }else{
      try{
        FileWriter fwriter = new FileWriter(ff);
        for(int i=1;i<100;i++){
          fwriter.write ("Add"+i+"\n");
        }
      }
    }
  }
}

```

```
        fwriter.close ();
    } catch (IOException e) {
        System.out.println(e);
    }
}
}
```

Answer the following questions.

- A. What is "IOException e"? (5 %)
- B. Show the final result. (10 %)