



注意事項：

1. 答案卷書寫題號依序作答，不必抄題。
2. 答案卷不可書寫任何可辨別個人姓名或特殊標記，違反者以零分計算。
3. 請於試題紙上填寫准考證號，繳卷時「試題」、「答案卷」一併繳回。

一、選擇題(15%)

1. _____ is the delivery of education at one location while the learning takes place at other locations.
a. Extended training (ET) b. Faraway schooling (FS) c. Distance learning (DL) d. Remote teaching (RT)
2. Web pages are accessed and viewed using a software program called a Web _____.
a. enabler b. browser c. server d. scanner
3. Many Web pages use _____, which is the appearance of motion created by displaying a series of still images in sequence.
a. animation b. graphics c. audio d. virtual reality
4. A global positioning system (GPS) _____.
A) involves using video and computer technology to conduct a meeting between participants at geographically separate locations
B) enables users to talk to other people over the Internet
C) functions much like an answering machine, allowing callers to leave a voice message for the called party
D) consists of one or more earth-based receivers that accept and analyze signals sent by satellites in order to determine the receiver's position
5. A(n) _____ is a program that copies itself into other programs and spreads through multiple computers.
a. Virus b. Mouse c. Script d. Macro

二、問答題(85%)

1. 解釋下列專有名詞: (15%)
(1). 串流媒體 (2). MPEG 7 (3). CSS (Cascading Style Sheets) (4). 向量圖
(5). 類比訊號數位化過程中何謂取樣(Sampling)及量化(Quantization)
2. 簡述資料結構中堆疊(Stack)的主要特性，並舉例說明堆疊的實際應用。(10%)
3. 試說明 Merge Sort 演算法，並分析該演算法屬於 Internal 或者是 External 排序演算法。(15%)
4. 多媒體在 Web 2.0 網路概念中可扮演的角色為何? 試提出你的具體想法。(10%)
5. (1)請完成下列函式 GCD()。此函式以輾轉相除法求兩個正整數 n1 及 n2 的最大公因數(GCD)10 分

```
int GCD(int n1, int n2){
    int dividend, divisor, remainder;
    if(n1 <= 0 _____ n2 <= 0)
        return -1; // 若n1或n2小於等於0，回傳錯誤值-1
    dividend = (n1 > n2) ? n1 : n2; //找出兩數之大者當被除數
    divisor = n1 + n2 - _____; // 小者當除數
    do{
        remainder = _____;
        dividend = divisor;
        divisor = remainder;
    }while(divisor != 0);
    return _____; //回傳計算結果
}
```

- (2) 改以遞迴(Recursive)方式重新撰寫上列 GCD() 函式。(10 分)

6. 一個數等於它所有的因數和(不包括它本身)，這種數我們叫它完美數(perfect number)。又有二正整數 A 及 B，若所有 A 的因數和(不包括 A)等於 B；反之亦然，則此二正整數稱為朋友數(friendly number)。設 SumFact(n)函式為計算 n 的因數和(不包括 n)，請完成 SumFact(n)函式並利用它來計算小於 10000 的所有完美數及朋友數。(15 分)

//下列為參考程式碼

```
int SumFact(int n){//計算小於n之所有n的因數和
    int sum=1;
    for(int fact=2; fact < _____ ; fact++)
        if( _____ )
            sum+=fact;
    return sum;
}
int main(void){
    //<10000的perfect number
    for(int n=2; n<10000; n++){
        if( _____ ){
            cout << n << "is a perfect number.\n";
        }
    }

    // <10000的friendly number
    for(int n=2; n<10000; n++){
        int sum_n = _____;
        if( _____ && n!=sum_n){
            cout << n << " and " << sum_n << "are friendly number.\n";
        }
    }
    return EXIT_SUCCESS;
}
```