

國立臺北科技大學
九十五學年度學士班二、三年級轉學生招生考試
資訊工程系二年級計算機概論試題

填 准 考 證 號 碼

第一頁 共二頁

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注意事項：

1. 本試題共三大題，配分共 100 分。
2. 請標明大題、子題編號作答，不必抄題。
3. 全部答案均須在答案卷之答案欄內作答，否則不予計分。

一、Single Choice: (3% each)

1. In object-oriented programming, a private instance variable
 - (1) can never be modified by a method outside the class.
 - (2) can be modified by a method outside the class if it is returned by a method.
 - (3) can be modified by a method outside the class if it is a class type (with a mutator method) and is returned by a method.
 - (4) can be modified by using an object name followed by a dot and then the name of the instance variable.
2. In object-oriented programming, the term overloading refers to
 - (1) an error where more than one method matches a method call
 - (2) two or more methods in the same class that have the same name
 - (3) method calls where there are two many actual parameters
 - (4) two or more methods in different classes that have the same name
3. In C language, the highest index that can be used with an array
 - (1) is the number of elements in the array
 - (2) is the number of elements in the array minus one
 - (3) is determined by the array declaration
 - (4) changes as the program runs
4. In object-oriented programming, an abstract class
 - (1) is a class which cannot be instantiated
 - (2) is a class which has no methods
 - (3) is a class which has only abstract methods
 - (4) is a class which has only overridden methods

5. IP address 140.128.5.1 is (1) Class A (2) Class B (3) Class C (4) Class D
6. The protocol of sending email is (1) POP3 (2) SMTP (3) SNMP (4) ICMP
7. SPAM email means (1) Simultaneously Posted Advertising Message (2) Simple Posted Advertising Mail (3) Sending Posted Advertising Mail (4) Sending People Advanced Message.
8. Which the following items can convert name address to IP address? (1) NIS (2) NFS (3) DNS (4) NII
9. If $F(X, Y, Z) = X'YZ + XY'Z$, then F' is (1) $XY'Z' + X'Y'Z$ (2) $(X' + Y + Z)(X + Y + Z')$ (3) $X'Z + XZ'$ (4) $(X + Y' + Z')(X' + Y' + Z)$
10. Which is incorrect about boolean algebra? (1) $x(xor) 1 = x'$ (2) $x + yz = (x + y)(x + z)$ (3) $x(xor) y = x y$ (4) $x 1 = x$

二、Fill in the Blank Questions (3% each)

1. For the C program listed below, what will be printed when the program is executed?

```
int num[]={3, 4, 5, 6};
int *p = &num[0];
printf("%d\n", *(p+2)); //-----(1)_____
printf("%d\n", *p++);   //-----(2)_____
printf("%d\n", **++p);  //-----(3)_____
```

2. What will be the value of c after the following section of code is executed:

```
int i, c=0;
char A[5] = "ABCD";
for (i=0; i<4; i++) {
    switch (A[i]) {
        case 'A': c+=10;
        case 'B': c*=2;
                break;
        case 'C': c-=5;
        case 'D': c+=20;
                break;
    }
}
printf("%d", c); //----- (1) _____
```

3. What will the following code print?

```
void f(int *s, int p[][3]) { *s=p[1][1]; }
int a[3][3]={1, 2, 3, 4, 5, 6, 7, 8, 9}, *p;
void main() {
```

注意：背面尚有試題

```

    p=(int*)malloc(sizeof(int)) ;
    f(p, a) ;
    printf("%d ", *p);          //-----(1)_____
}

```

4. What will the following code print?

```

void main() {
    double x =5.5, y = 2.5;
    int i=3, j=4, k=5;
    x = - i % j + k++;
    y -= (int)x * (float) (i/k);
    printf("x=%f\n", x);        //-----(1)_____
    printf("y=%f\n", y);        //-----(2)_____
}

```

5. _____ Convert the hexadecimal number $(C1.FF)_{16}$ to binary number.
6. _____ Convert the decimal number $(301.875)_{10}$ to binary number.
7. _____ Convert the decimal number $(10101.0101)_2$ to decimal number.
8. _____ Convert the 2' complement of 10000011 to decimal number.
9. _____ Convert hexadecimal 567AB0 to its 15's complement.
10. _____ Convert decimal 9 to 84-2-1 code.

三、 Briefly answer the questions: (5% each)

1. What is CMMI?
2. What is UML in software development?
3. Draw a diagram to explain what a multi-tier web application is.
4. What are Stack and Queue?
5. What are the differences between call by reference and call by value?
6. Draw the logic circuit. $F(X, Y, Z) = X'Y + XZ'$
7. Write the true table: $F(X, Y, Z) = XY + Y'Z + X'YZ'$.
8. State whether each of the following is true or false
 - (1) MP3 is related to video image.
 - (2) ALU is related to CPU component.
 - (3) RFID is related to Wireless.
 - (4) SET is related to FTP protocol.
 - (5) MIPS is related to Monitor resolution.