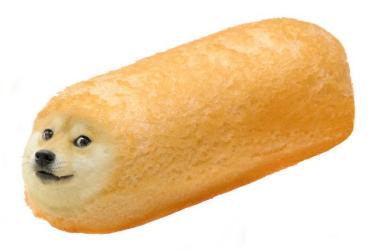# 11/02程式設計一小考詳解

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參考答案

第一部分

1.~~B~~D   2.A   3.A   4.E   5.C

6.D   7.DE   8.BE

第三部分

A.1   B.2.0   C.7

D.3   E.true

黑色部分是助教給的答案
紅色答案為有待確認的正確答案

Multiple Choices   (80%)

1. Given

    1. class Foo {
    2.   public static void main(String[] args) {
    3.   byte b1, b2=2;
    4.   final int CONST = 10;
    5.   // insert statement here
    6.   }
    7. }

    and the following statements

    I.   b1 = b2;
    II.   b1 = b2 + 10;
    III. b1 = CONST + 10;
    IV.   b1 = CONST + b2;
    V.   b1 = 10 + 10;

    which statement(s) inserted at line 5 will be fail the compilation?

    (A) Only I and II   (B) Only II and IV   (C) Only I, IV and V   (D) Only I, III and V

    (E) None of them

2. What are the contents of variables var1 and var2 after executing the following pro-
    gram segment?

    1. int var1, var2 = 10;
    2. var1 = ++var2 + var2++

    (A) var1 is 22 and var2 is 12   (B) var1 is 21 and var2 is 12

    (C) var1 is 22 and var2 is 11   (D) var1 is 21 and var2 is 11

    (E) var1 is 20 and var2 is 12

3. What is the output of compiling and executing the following program?

```
1.    class Brownie {
2.        public static void main(String[] args) {
3.            int var1=0, var2=10;
4.            if((var2++ > 10) && (++var2 >= 10)) var1 += var1 - var2;
5.            System.out.print(var1 + "X" + var2);
6.        }
7.    }
```

(A) 0X11   (B) -12X12   (C) 0X10   (D) -11X11   (E) 0X12

4. What is the output of compiling and executing the program given in Question 1-3 if && is replaced by & at line 4?

(A) 0X11   (B) -12X12   (C) 0X10   (D) -11X11   (E) 0X12

5. What is the output of compiling and executing the following program by typing 1 on the keyboard?

```
1.    import java.util.Scanner;
2.    class Poodle {
3.        public static void main(String[] args) {
4.            int var1;
5.            Scanner sc = new Scanner(System.in);
6.            var1 = sc.nextInt();
7.            switch(var1) {
8.                case 1: System.out.print(var1);
9.                case 2: System.out.print(var1);
10.                   break;
```

7.   }
(A) 0X11   (B) -12X12   (C) 0X10   (D) -11X11   (E) 0X12

4. What is the output of compiling and executing the program given in Question 1-3 if && is replaced by & at line 4?
    (A) 0X11   (B) -12X12   (C) 0X10   (D) -11X11   (E) 0X12

5. What is the output of compiling and executing the following program by typing 1 on the keyboard?

```
1.      import java.util.Scanner;
2.      class Poodle {
3.          public static void main(String[] args) {
4.              int var1;
5.              Scanner sc = new Scanner(System.in);
6.              var1 = sc.nextInt();
7.              switch(var1) {
8.                  case 1: System.out.print(var1);
9.                  case 2: System.out.print(var1);
10.                         break;
11.                 case 3: System.out.print(var1);
12.                 default: System.out.print("Wrong");
13.             }
```

15.   }
(A) Compilation fails.   (B) 1   (C) 11   (D) 111   (E) 111Wrong

6. What is the output of compiling and executing the following program by typing 3 on the keyboard?

(A) Execution fails.   (B) 3   (C) 33   (D) 3Wrong   (E) 333

7. Which one of the following is a legal statement?
   (A) boolean flag = 3;   (B) int v = 0X7FFFFFFF;   (C) float f = 3.2 + 2.1F;
   (D) char ch = 'A' + 1;   (E) long obj = 3;

8. Which two of the following literals are equal?
   (A) 33   (B) 033   (C) 0b33   (D) 0x33   (E) 27
   (A) public   (B) static   (C) void   (D) new   (E) private

(10%) Given

```
    class TestPrint {
        public static void main(String[] args) {

        _____

        }

    }
```

, complete the given program to print the following message on the standard output device.

"The symbol \\ denotes single line comment"

Show the result of evaluating the following expressions.
(A) 8 / 7

7. Which one of the following is a legal statement?

(A) boolean flag = 3;   (B) int v = 0X7FFFFFFFF;   (C) float f = 3.2 + 2.1F;

(D) char ch = 'A' + 1;   (E) long obj = 3;

8. Which two of the following literals are equal?

(A) 33   (B) 033   (C) 0b33   (D) 0x33   (E) 27

(A) public   (B) static   (C) void   (D) new   (E) private

(10%) Given

```
class TestPrint {
    public static void main(String[] args) {

        _____

    }

}
```

, complete the given program to print the following message on the standard output device.

"The symbol \\ denotes single line comment"

Show the result of evaluating the following expressions.

(A) 8 / 7

(B) 8 / 4.0

(C) a = 3 + 4

(D) 8 % (-5)

(E) (3 > 4) ^ (4 > 3)

第一題

這題助教給的答案是D，但是應該是B

訣竅：注意b1、b2都是byte，CONST是int

II：byte+int會是int，不能存入byte
IV：同上

第二題

int var1 = 10; int var2 = 10;

var1 = ++var2 + var2++; 求var1、var2？

觀念：

i++ → 最後再加

++i → 先加再做

第二題

int var1 = 10; int var2 = 10;
var1 = ++var2 + var2++;   求var1、var2？

所以式子從左到右執行順序是：
先++var2 變成11   →   11 + 10++
（這個時候var2的值會變成11而不是10）
var1=11+11   →   22
（然後var2會再加一變成12）

第三、四題

這題不難，把自己當電腦從第一行往下讀，最後就能知道答案了，主要是考if、＆＆和++的觀念。

if((var2++>10)&&(++var2>=10))

1>(var2++>10)

var2++ = 10　因為整行做完最後才會加

所以結果會是false，遇到&&就不會做下去了

var2維持在11，不會再加１

第三、四題

&(and)是邏輯運算子，在判斷的時候，
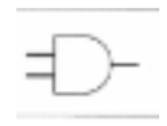&&從左判斷到右邊的時候，遇到false就不做了
&可以全部做完再判斷

第三、四題

&(and)是邏輯運算子，以下是真值表：

The AND Gate

- The AND gate has two inputs and one output.
- Output is true only if ALL inputs are true

Input		Output
0	0	0
0	1	0
1	0	0
1	1	1

第五題

這題主要是考switch
通常用switch會在每個case下面放break
沒有放的話會導致程式繼續往下執行
例如下面輸入1，則會輸出2次n
Switch(n)
{
      case 1:   S...print(n);
      case 2:   S...print(n); break;
}

第六題

延續上題的觀念，做到break或是default即結束

第七題

A>boolean只能放true or false

B>0x代表十六進位，請檢查是否會溢位

C>右式算出來的型態是double，存入float會溢位

D>字元和整數運算完會變成整數，但是可以直接存入字元變數內，所以這題答案會是對的

E>int可以存入long

第八題

題目問哪 2 個常值是相等的

B>033　數字左邊加0表示八進位

E>27是十進位的數字

第II大題

請寫一個程式輸出以下的內容：
 "The symbol \\ denotes single line comment"

這題主要在考跳脫字元
要輸出反斜線，需要再加一個反斜線在前面
所以會打成\\\\
要輸出"的話，也要在前面加上反斜線
會打成\"......\"
所以最後會變成"\"...\\\\\...\""

第III大題

A > 整數和整數運算，算出來會是整數

B > 整數和小數運算，算出來會是小數

C > 7

D > 3

E > ^是邏輯運算子：XOR

遇到奇數個true就是true，所以結果會是true

第III大題

XOR邏輯運算子的真值表：

Exclusive-OR gate

Input$_A$ ———⟩
Input$_B$ ———⟩ ⟩ ——— Output

A	B	Output
0	0	0
0	1	1
1	0	1
1	1	0