

107-1 程式設計 期中考

6 跟 10 兩題為指標概念，老師還沒教

1. Assuming x (type double) is 12.3155 and i (type int) is 30 , show the lines displayed by the following statements.

```
printf("x is%.2f,i is%4d\n", x, i);  
printf("i is%d\n", i);  
printf ("x is%.1f\n", x);
```

2. Answer true or false to the following statements:

Expressions 1 to 4 below contain different operands and operators. Each expression's value is given in the corresponding comment, assuming x , y , and z are type double , $flag$ is type int and the variables have the values

x	y	z	$flag$
3.0	4.0	2.0	0

(Hint: precedence)

- ```
() 1. !flag
() 2. x + y / z <= 3.5
() 3. !(x >= 5) && (z % 2 == 0)
() 4. !(flag || (y + z >= x - z))
```

3. What value is assigned to  $x$  when  $y$  is 12.0 and  $z$  is 8? (Hint: precedence)

```
if (z < 13 || z > 15 && y > 17)
 if(y>13 && z <= 8)
 x = 13 - y + z;
 else
 x = 24 / z + y;
else
 x = 4 + z;
printf("%d", x);
```

4. What is displayed by the following program segments, assuming  $a$  is 14 and  $b$  is 4?

```
for(i = 1; i <= a; i++){
 printf("*");
 if(i%b == 0)
```

```
printf("\n");
}
```

5. 寫出以下程式輸出之結果

```
#include <stdio.h>
int main(void)
{
 char Arr[]="CCACDBBDAB";
 int i = 0, b = 0;

 while(Arr[i]!='\0'){
 switch(Arr[i]%5){
 case 0: b*=2;
 case 1: b--;
 break;
 case 2: --b;
 case 3: b+=3;
 break;
 default: ++b;
 }
 printf("%c %d\n", Arr[i],b);
 i+=2;
 }
 return 0;
}
```

6. 完成下列 Swap 程式

```
#include <stdio.h>
_____(1)_____ /* function declaration */
int main(){
 int a = 5, b = 8;
 swap(____(2)____, ____ (3) ____);
 printf("a= %d, b = %d", a , b);
 return 0;
}
void swap(int *x, int *y){
 int swap = 0;
 _____(4)_____ /* Store old x in temp */
 _____(5)_____ /* Store old y in x */
```

|                                                                         |
|-------------------------------------------------------------------------|
| <div><div>(6)</div><div>/* Store old x in y */</div></div> <div>}</div> |
|-------------------------------------------------------------------------|

7. 寫出以下程式輸出之結果

```
#include<stdio.h>
int main(void)
{
 int A = -1, B = 2;

 if(A++)
 {
 printf("%d %d\n",--A, B--);
 if(A++ < 0)
 printf("%d %d\n",A++, --B);
 }else if(!A--){
 printf("%d \n",++A);
 }else
 printf("%d \n",++A, ++B);

 if(!B--)
 printf("%d %d\n", A++, --B);
 else
 printf("%d %d\n", --A, B++);

 return 0;
}
```

8. 寫一程式可輸入、出輸出下列結果

A baseball player's batting average is calculated as the number of hits divided by the official number of at-bats. In calculating official at-bats, walks, sacrifices, and occasions when hit by the pitch are not counted. Write a program that takes an input file containing player numbers and batting records. Trips to the plate are coded in the batting record as follows: H—hit, O—out, W—walk, S—sacrifice, P—hit by pitch. The program should output for each player the input data followed by the batting average. ( Hint : Each batting record is followed by a newline character.)

|                                          |                                                             |
|------------------------------------------|-------------------------------------------------------------|
| Sample input file:<br>12 HOOOWSHHOHPWWHO | Corresponding output:<br>Player 12's batting average: 0.455 |
|------------------------------------------|-------------------------------------------------------------|

9. What is displayed by the following program segments, assuming m is 5?

```
for (i = 1; i <= m; ++i) {
 for (j = 0; j < i; ++j) {
 printf("*");
 }
 printf("\n");
}
```

10. 寫出以下程式輸出之結果

Trace the execution of the following fragment.

```
int m = 10, n = 5;
int *mp, *np;

mp = &m;
np = &n;

*mp = *mp + *np;
*np = *mp - *np;

printf("%d %d %d %d\n", m, n, *mp, *np);
```

11. 承上題，根據程式碼一行一行執行，依序畫出記憶體中的內容變化結果。

|      |    |    |
|------|----|----|
| 記憶體  |    |    |
|      | ⋮  |    |
| 1020 | 10 | m  |
| 1024 | 5  | n  |
|      | ⋮  |    |
| 2048 | ?  | mp |
| 2052 | ?  | np |
|      | ⋮  |    |