

淡江大學 101 學年度碩士班招生考試試題

67-1

系別：資訊工程學系

科目：程式語言 C++

考試日期：2月26日(星期日) 第2節

本試題共 8 大題， 5 頁

1. Which of the following statements (1)~(9) are correct? (10%)

```
class A
{
    private:
        int x;
    protected:
        int y;
    public:
        int z;
        void SetXYZ();
};
void A::SetXYZ()
{
    x = 100; //(1)
    y = 200; //(2)
    z = 300; //(3)
}
```

```
class B:public A
{
    public:
        void SetXYZ();
};
void B::SetXYZ()
{
    x = 100; //(4)
    y = 200; //(5)
    z = 300; //(6)
}
int main()
{
    x = 100; //(7)
    y = 200; //(8)
    z = 300; //(9)
    return 0;
}
```

本試題雙面印刷

2.

```
class A
{
    protected:
        int x;
    public:
        void SetData(int);
};
class B : public A
{
    public:
        void Print();
};
```

```
class C : public A
{
    private:
        int y;
    public:
        void SetData(int,int);
        void Print();
};
```

- (a) How many members in class B? Specified how many data members and member functions in class B. (5%)
- (b) How many members in class C? Specified how many data members and member functions in class C. (5%)

背面尚有試題

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3. Find the error(s) in each of the following and ***correct it*** (them) (20%)

(a)
class Player
{
 public:
 int Player();
 void ~Player();
};

(b)
class Avatar
{
 private:
 int HP = 100;
 int AC = 1;
 int ATK = 10;
}

(c)
class A
{
 protected:
 int data;
 public:
 A():data(0){};
 void SetData(int x):data(x){};
};

(d)
class A
{
 private:
 int dataA;
 public:
 void Print(){
 cout<<"dataA="<<dataA<<endl;
 };
};
class B : public A
{
 private:
 int dataB
 public:
 void Print(){
 cout<<"dataA="<<dataA<<endl;
 cout<<"dataB="<<dataB<<endl;
 };
};

4. Complete the constructors of class B. (10%)

class A
{
 private:
 int dataA;
 public:
 A():data(0){};
 A(int x):data(x){};
};

class B : public A
{
 private:
 int dataB;
 public:
 B(){
 // to set dataA = 0 and dataB = 0};
 B(int x, int y){
 // set dataA = x, dataB = y};
};

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67-3

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本試題共 8 大題， 5 頁

5. Print out the following program. (10%)

```
#include <iostream>
using namespace std;
class Door
{
public:
    Door();
    ~Door();
};
Door::Door()
{
    cout<<"Install a door"<<endl;
}
Door::~~Door()
{
    cout<<"Demolition a door"<<endl;
}
class AutomaticDoor : public Door
{
private:
    int sensor;
public:
    AutomaticDoor();
    ~AutomaticDoor();
};
```

```
AutomaticDoor::AutomaticDoor()
{
    cout<<"Install a sensor on door"<<endl;
}
AutomaticDoor::~~AutomaticDoor()
{
    cout<<"Demolition the sensor"<<endl;
}

int main()
{
    Door *bathroomDoor;
    AutomaticDoor *mainDoor;
    bathroomDoor = new Door;
    delete bathroomDoor;
    mainDoor = new AutomaticDoor;
    delete mainDoor;
    return 0;
}
```

6.

```
#include <iostream>
using namespace std;
int Min(int *, int, int);
int Min(int *data, int minValue, int i) {
    if (data[i] == -99) return (a);
    if (minValue > data[i])
        minValue = data[i];
    return Min((b), (c), (d));
}
```

```
int main()
{
    int x[8] = {30, 10, 40, 70, 60, 50, -99};
    int minValue = 99999;
    minValue = Min(x, (e), 0);
    cout<<"min value: "
        <<minValue<<endl;
    return 0;
}
```

Filling the blanks (a)~(e) in the following program. This program is used recursive to find the minimum value of an array, and return minimum value to caller. (10%)The output is min value : 10.

背面尚有試題

淡江大學 101 學年度碩士班招生考試試題

57-4

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本試題共 8 大題， 5 頁

7. Print out the output. (10%)

<pre>#include <iostream> using namespace std; class Animal { protected: int leg; public: Animal() { leg = 4;} ; Animal(int x){ leg = x;} }; class Lion : public Animal { protected: int tail; public: Lion() { tail = 1; }; void Detail() { cout<<"tail = "<<tail<<endl; cout<<"leg = "<<leg<<endl; } };</pre>	<pre>class Human : public Animal { protected: int arm; public: Human() { Animal(2); arm = 2; }; void Detail() { cout<<"arm = "<<arm<<endl; cout<<"leg = "<<leg<<endl; } }; int main() { Human John; Lion Smith; John.Detail(); Smith.Detail(); return 0; }</pre>
--	--

8.

<pre>#include <iostream> using namespace std; void fun(int *); void fun(int *data) { for(int i=0; data[i]!=-1; i++) <u>// ?K</u> cout<<data[i]<<endl; }</pre>	<pre>int main() { int x[6] = {1, 2, 3, 4, 5, -1}; int y[6] = {10, 20, 30, 40, -1, 50}; fun(x); fun(&y[2]); return 0; }</pre>
---	--

(a) Print out the output of following program. (10%)

(b) Which of the following statements can replace the statement K in (a)? (multi-select) (10%)

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67-5

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- (1) `for(int i = 0; (data+i) != -1; i++) cout<<data+i<<endl;`
- (2) `for(int i = 0; (*data+i) != -1; i++) cout<<*data+i<<endl;`
- (3) `for(int i = 0; *(data+i) != -1; i++) cout<<*(data+i)<<endl;`
- (4) `for(int i = 0; (*data+i) != -1; i++) cout<<*data+i<<endl;`
- (5) `for(int i = 0; *data != -1; i++) cout<<*(data++)<<endl;`