第一部分 笔试

Note: All answers must be writen on answer sheet!

I．Answer the following questions and Read the following programs：（20 scores）

1．Explain the primary principle of object construct and destruct, Further, describe the order of construct and destruct for the base class and derived class. (4 scores)

答案：

1. 单个对象的构造和析构次序；父类和子类在构造和析构之间的关系。 各2分。

2．Give out the result of this program (4 scores)

# include <iostream>

using namespace std;

class TeacherID

{ public:

TeacherID(int id =0 ) : value(id)

{ cout <<" Teacher id is "<<value<<" , "; }

void setValue(int id)

{ value = id;

cout <<" Set Teacher id " << value << endl;

}

int getValue() const

{ cout <<" Get Teacher id ";

return value;

}

protected:

int value;

};

class Teacher

{ public:

Teacher(int id =0 ) : ptr(new TeacherID(id))

{ cout <<" Teacher "<<id<<endl; }

void setValue(int id)

{ ptr->setValue(id); }

int getValue() const

{ return ptr->getValue(); }

~Teacher()

{ delete ptr; }

private:

TeacherID \* ptr;

};

int main()

{ Teacher A(35), B;

cout << A.getValue() <<endl;

B.setValue(21);

cout << B.getValue() << endl;

return 0;

}

答案

Teacher id is 35 , Teacher 35

Teacher id is 0 , Teacher 0

Get Teacher id 35

Set Teacher id 21

Get Teacher id 21

3．What does the following program output? ( 4 scores)

#include <iostream>

using namespace std;

class MyClass

{

char ch;

public:

MyClass();

MyClass(char character);

void Print();

~MyClass();

};

MyClass::MyClass()

{

cout<<"This is a constructor!"<<endl;

ch='a';

}

MyClass::MyClass(char character)

{

cout<<"This is a constructor!"<<endl;

ch=character;

}

void MyClass::Print()

{

cout<<"The value of ch is "<<ch<<endl;

}

MyClass::~MyClass()

{

cout<<"This is a destructor!"<<endl;

}

int main()

{

MyClass first, second('b');

first.Print();

second.Print();

return 0;

}

答案：

This is a constructor!

This is a constructor!

The value of ch is a

The value of ch is b

This is a destructor!

This is a destructor!

4．What does the following program output? ( 4 scores)

#include <iostream>

using std::cout;

using std::endl;

using namespace std;

class A {

public:

int x;

A() {cout<<(x=0);}

A(int i,int j) {cout<<(x=j=0);}

~A() {cout<<++x;}

};

int main() {

A \*a = new A[2,3];

delete[] a;

return 0;

}

答案

000111

5. What does the following program output? ( 8 scores)

#include<iostream>

using namespace std;

class base {

public:

virtual void disp(){ cout<<"base class"<<endl;}

};

class derive1 : public base {

public:

void disp() {cout<<"derive1 class"<<endl;}

};

class derive2 : public base {

public:

void disp() {cout<<"derive2 class"<<endl;}

};

int main() {

base obj1, \*p;

derive1 obj2;

derive2 obj3;

p=&obj1; p->disp();

p=&obj2; p->disp();

p=&obj3; p->disp();

return 0;

}

答案：

base class

derive1 class

derive2 class

II．Fill in the following blanks to complete programs. （20 score）

1． A program output is below, and complete the code:

(21,32)

(16,29)

51,62

(16,29)

#include <iostream>

using std::cout;

using std::endl;

using namespace std;

class A {

public:

A(\_\_\_\_ 1\_\_\_\_\_) {\_\_\_\_ 2\_\_\_\_\_ }

void move(int x, int y) {a+=x;b+=y;}

void show() {cout <<"("<<a<<","<<b<<")"<<endl;}

private:

int a,b;

};

class B:public A {

public:

B(int i,int j,int k, int l): \_\_ \_\_ 3\_\_\_ \_\_{}

void fun() {move(3,5);}

void f1() {A::show();}

void show() {cout <<x<<","<<y<<endl;}

private:

int x,y;

};

int main() {

A a(21,32);

\_\_\_\_ 4\_\_\_\_\_

B b(13,24,51,62);

b.fun();

\_\_\_\_ 5\_\_\_\_\_

b.show();

b.f1();

return 0;

}

答案：

1. int i,int j

2. a=i;b=j;

3. A(i,j),x(k),y(l)

4. a.show();

5. b.A::show();

2. Complete the class defination

Class MyClass

{

public:

MyClass(){x=0;}

\_\_\_\_\_\_ 6\_\_\_\_\_\_\_\_\_int GetNum(\_\_\_\_\_\_ 7\_\_\_\_\_\_\_\_\_my);

private:

int x;

};

int GetNum(\_\_\_\_\_\_ 7\_\_\_\_\_\_\_\_\_my)

{

Return \_\_\_\_\_ 8\_\_\_\_\_\_\_\_;

}

答案：

6. friend

7. MyClass

8. my.x

3. The result of this program is :10, complete the code to get the result.

#include <iostream>

using std::cout;

using std::endl;

class MyClass

{

pub1ic:

\_\_\_\_\_\_9\_\_\_\_\_\_\_\_\_//Set the value of X

\_\_\_\_\_\_10\_\_\_\_\_\_\_\_ //Get the value of X

private:

int x;

};

void main()

{

Myclass my(10);

cout<<my.GetNum()<<endl;

}

答案：

9. MyClass(int a) {x=a;}

10. int GetNum() {return x;}

III．Write programs pies according to the requests（20 score）

1．Array is often used in our program, but it cannot find the over bound, so our program cannot work well when we try to using the element which its index is larger than the maximum size. Could you find a solution by using operator overload technology to solve the problem? So, let’s define a class called Words, which is used to store some characters, it has two data member: int len，char \* str. Please give out a full definition of Words and a test code to show how it is work. (10scores)

答案：

1. Class Words definition 3

2. Operator overload implementation 3

3. Test code 4

2．According to the following requirements, design a class: (10 scores)

In a school, there are many possible objects here, for example, the Teacher and the Student. You know, many information that between them is same, such as name, age, etc. Could you design the class for Teacher and Student, try your best to reuse the code and make your code as simple as possible by using the technology of inheritance. Your class definition should have constructor and destructor, access function and so on.

答案：

4. base class definition 2

5. using inheritance to define the Teach and Student 4, if not, no more than 2 point

6. class implementation 2

7. Driver/ Test/Main function 2

**第二部分 机试**

**要求：**

1. **编程：**
   1. 在本地D：或E：盘中，建立自己的文件夹，用来完成程序的编写和调试。
   2. **可以：**第一题Project(项目名)为Pro1，第二题Project(项目名)为Pro2，以此类推。
2. **提交：**

考试结束后，在10分钟之内完成以下操作：

* 1. 在虚拟**Z：盘**上建立一个以**自己的学号**命名的文件夹，用于保存上交的考试程序的源文件。
  2. 将每题的所有源程序文件“**\*.cpp**”、自定义头文件“**\*.h**”和可执行程序“**\*.exe**”存入**Z：盘**自己的目录中。

**IV** Write and test programs according to the requests（40 scores）

1．(10 scores) Define a class Date, include some private member, such as year, month, and day. It should implement some basic functions, such as add some days to certain date, and subtract some days to certain date, calculate the difference between two dates.

答案：

1. Pass compile and link, 4
2. Class definition 3
3. class implementation 3 each function 1 point

2. (30 scores)

This project requires you to write a C++ program that will manage a array of data about health club members. This program will give you practice inputting data from files, writing and calling functions, using pointers and arrays and outputting data to a file. You should use more than one array. A text file contains first name, membership id (integer) height (double, in inches), and weight (double, in pounds) for members of a health club at the beginning of the promotion. Insert the member data into an array**.** Process members until end of the file. After the data is stored in the list do the following: Print the list to the screen Print a list of members order by name.

The test data file would be (Please create the data file by yourself, you can use notepad or other text file editor )

Data1.txt

Albert 1166 55.5 150

Babs 1167 60 110

Freida 2323 71 175.5

Big\_Al 9876 77 244

Tiny 9875 44 77

Zeke 3333 71.5 188

Yolanda 4444 64.5 114

Slim 5656 72 150

Slimmer 1000 74 148

Too\_Slim 7123 73 130

Brunhilda 7124 66 140

Esmerelda 9900 66 135

Bubba 3005 66 200

答案：

1. Open file and read data from file 5
2. using array correctly 5
3. Sort by member name 5, using pointer get extra 5 point
4. Print member list 5
5. Main function or Test case , base program structure 5