

Object-Oriented Programming

Mid-term examination

Write your answer on the answer sheet.

I. Choices (3%)

Choose the only correct answer from the four choices.

- 1、 In C++ language, function prototype doesn't identify ()
A. The return type of the function. B. The number of arguments of the function
C. The type of arguments of the function. **D. The functionality of the function**

- 2、 In a C++ program, objects communicate each other by ()
A. inheritance **B. calling member functions** C. encapsulation D. function overloading

- 3、 For an arbitrary class, the number of destructors can't be greater than ()
A. 0 **B. 1** C. 2 D. 3

- 4、 Suppose a class is defined without any keywords such as public, private and protected, all members default to: ()
A. public B. protected **C. private** D. static

- 5、 About inline function, which statement is correct? ()
A. When the program is executed, inline function will insert its code to every place where this function is called.
B. When the program is compiled, code of the inline function will be inserted at the place where this function is called.
C. Inline function must be defined inside a class.
D. Inline function must be defined outside a class with keyword "inline".

6. For a in void f(int a[]) and void f(int *a), which is wrong? ()
A. They are both pointers.
B. a+i is the (i+1)th element.
C. They are both const pointers.
D. a[i] can be left or right value.

II. Write the output of the code below (7%)

1)

```
int aa1 = 53, aa2 = 69;
void f(int a1, int &a2)
{
    a2 = a1;
    a1 += a2;
    cout << aa1 << aa2 << endl;
    aa2 -= 7;
    a2 = a2++;
}
int main()
{
```

5353
5347

```

        f(aa1, aa2);
        cout << aa1 << aa2 << endl;
        return 0;
    }

2)
int main() {
    char a['z'];
    for (char i = 'a'; i < 'z'; i++)
        a[i] = 'A' + i - 'a';
    cout << a['e'] << endl;
    for (char i = 'a'; i < 'z'; i++)
        a[i] = '1' + i - 'a';
    cout << a['e'] << endl;
}

3)
class A {
    int i;
public:
    A(int ii) : i(ii) { print(); };
    void f(int j = 6) { i = j; print(); };
    void f() const { print(); };
    int print() const { cout << i << endl; };
}
int main() {
    const A a(2);
    a.f();
    return 0;
};

4)
int main(){
    int m = 555;
    int n = 666;
    int &k = m;
    k++;
    cout << m << "----" << n << endl;
    k = n;
    k++;
    cout << m << "----" << n << endl;
    return 0;
}

5)
void f(char ar[]) {
    cout << sizeof(ar) << endl;
    char* p = ar;
    p++;
    cout << *p << endl;
}

```

```

}
int main() {
    int ai[] = {1, 2, 3, 4, 5};
    cout << sizeof(ai) << endl;
    char ar[] = "Hello";
    cout << sizeof(ar) << endl;
    char* p = ar;
    cout << sizeof(p) << endl;
    f(ar);
    return 0;
}

```

6)

```

class A {
public:
    A() { cout << "A()" << endl; }
    A(const A& r) { cout << "A(A&)" << endl; }
    ~A() { cout << "~A()" << endl; }
};
int main() {
    A *p = new A[2];
    A a(*p);
    delete p;
    return 0;
}

```

A()
A()
A(A&)
~A()
~A()

7)

```

class A {
    int i;
public:
    A() : i(10) { f(); dump(); }
    void dump() { cout << i; };
    virtual void f() { i++; }
};
class B : public A {
    int i;
public:
    B() : i(20) { f(); dump(); }
    void dump() { cout << ++i; };
    void f() { i--; }
};
int main() {
    A* p = new B();
    p->dump();
    return 0;
}

```

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ANSWER SHEET for Object-Oriented Programming Mid-term examination

Name: _____ SID: _____

I.

1. 2. 3. 4. 5. 6.

II.

1.

2.

3.

4.

5.

6.

7.