东 南 大 学 考 试 卷（ A 卷）

课程名称 程序设计基础及语言II(双语) 考 试 学 期 19-20-3

适用专业	计算机大类	考试形式	半开卷 可带一本教材	考试时间长度	笔试 60 分钟 机试 120 分钟

总分：**100 分**

题目	I	II-1）	II-2）	III-1）	III-2）	III-3)	总分
得分							
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第一部分 笔试

Note: All answers must be written on answer sheet!

I Read the programs as follows, and please write down the output of them：（20 score）

1．What is the output of the following? (4 score)

```
#include <iostream>
using namespace std;
#include<stack>
int main()
{
	stack<int> stack1;
	for (int i = 0; i < 10; i++)
	{
		if (i % 3)
		{
			stack1.push(i);
			cout << i << '\t';
		}
	}
	cout << endl;
	while (!stack1.empty())
	{
		cout << stack1.top() << '\t';
		stack1.pop();
	}
	return 0;
}
```

2．What is the output of the following? (4 score)

```
class Base {
	int x;
 public:
	Base(int x1): x(x1){cout << "Base object is created! "<< x << endl;}
	virtual void f() { cout<<x<<endl;}
	~ Base(){ cout << "Base object is destroyed!"<< endl; }
 };
class Derived : public Base {
	int y;
public:
	Derived(int x1, int y1) : Base(x1), y(y1) { cout << "Derived object is created! " << y <<
endl; }
	void f() { Base::f(); cout<<y<<endl; }
```

```
    ~ Derived(){ cout << "Derived object is destroyed!"<< endl; }
};
int main()
{
    Base a1(1), a2(2);
    Derived b1(3,4);
    Base *a[3]={&a1,&a2,&b1};
    for (int i=0;i<3;++i)
    {
        cout<<"第 "<<i+1<<" 个对象 ";
        a[i]->f();
    }
}
```

3．What is the output of the following?　(4 score)

```
#include <iostream>
using namespace std;
class A {
public:
A(){cout << ".";}
~A(){cout << ".";}

};
class B : public A {
    A _a;
public:
    B(){cout << ".?";};
    ~B(){cout << "!.";};
};

B b;
int main() { }
```

4．What is the output of the following?　(4 score)

```
#include <iostream>
#include <string>
using namespace std;
class A {
    static string s;
        static int pos;
    friend ostream& operator<<(ostream& _o, A& _a);
```

```
public:
    A& operator()();
};
string A::s = "Nanjing";
int A::pos = 0;

A& A::operator()()
{
    cout << s[++pos];
    return *this;
}
ostream & operator<<(ostream& _o, A& _a)
{
        _o << _a.s[++_a.pos];
    return _o;
}
int main()
{
    A a, b;
    a()();
            b()();
        cout << a << b;
}
```

5．What is the output of the following? (4 score)

```
#include <iostream>
#include<string>
using namespace std;
class zero_denominator
{
public:
      void disp_msg()
      {
            cout << "Zero denominator." <<
endl;
      }
};
class gossip
{
public:
      gossip(string m)
            :msg(m)
```

```
void func1(int den)
{     gossip gsp2("func1");
      if (den != 0)
      {
            cout << 3 / den << endl;
      }
      else
      {
            throw zero_denominator();
      }
}
int main()
{
      gossip gsp1("Main");
      int int_array[2] = { 3,0 };
      try
      {
```

```
    {
        cout << msg << " in." << endl;
    }
    ~gossip()
    {
        cout << msg << " out." << endl;
    }
private:
    string msg;
};
```

```
        for (int i = 0; i <2; i++)
        {
            func1(int_array[i]);
        }
    }
    catch (zero_denominator& den_exp)
    {
        den_exp.disp_msg();
    }
    return 0;
} // end main
```

II．To fill in the following blanks to complete program segments. （20 scores）

1. (10 scores)Filling the blanks of the program. Suppose we want to read a line of text from a file, change all letters (only alphabet letters) to capital and print it on the screen.

```
#include<iostream>
#include <____(1)___>
using namespace std;

int main()
{
    ifstream inFile("text1.txt", ios::in);
    if (___(2)___)
    {
        cerr << "Open failed." << endl;
        exit(1);
    }
    char _____(3)_____;
    inFile.get(msg, 200, '\n');
```

```
int i = 0;
while (_______(4)____)
    {
        if ((msg[i] <= 'z') && (msg[i] >= 'a'))
        {
            ____(5)____;
        }
        ++i;
    }

    cout << msg << endl;
    return 0;
}
```

2. (10 scores)Filling the blanks to make the program successful. (10scores)——双向链表操作

```
#include <iostream>
using namespace std;
template <typename T>
class Node
{
    template <typename T>
    （1）      class List;
public:
    Node( )
    {
        data = 0;
        pNext = NULL;
```

```
        pLast = NULL;
    }
private:
    T     data;
    Node * pNext;
    Node * pLast;
};

template <typename T>
class List          // Define a doubly linked list
{
private:
    Node<T> * pHead; //  正向链链头
    Node<T> * pTail; //  反向链链尾
    int length;
public:
    List():length(0),pHead(NULL),pTail(NULL){}

    ~List()//清空
    {
        Node<T> * pos = pHead;
        while (pos != NULL)
        {
            pHead = pHead -> pNext;
            delete pos;
            pos = pHead;
        }
        pTail = NULL;
    }

    void traverseList()//正向遍历
    {
        Node<T> * pos = pHead;
        while (pos != NULL)
        {
            cout << pos->data << endl;
            ___（2）___          ;
        }
        cout << endl;
    }
    List<T>& InsertAtTail(T num)//插入数据
    {
        Node<T> * temp = new Node<T>(      );
        temp->data = num;
        if (pHead == NULL)
        {
            temp->pLast = temp->pNext = NULL;
            pHead = pTail = temp;
        }
        else
        {
            temp->pNext = NULL;
            ___（3）_____
            pTail->pNext = temp;
```

```
            pTail = temp;
        }

        length++;
        return ___（4）_____ ;
    }

    bool RemoveElement(int value)
       // Delete the node corresponding to the specified value, if not found, return false
    {
        if (pHead == NULL) return false;
        bool isDeleted = false;
        Node<T> *pos = pHead;
        while (pos != NULL)
        {
            if (pos->data == value)
            {
                if (pos == pHead)// if the head element of the linked list matches value
                {
                    pTail = pHead = pHead->pNext;
                    pTail->pLast = NULL;
                    delete pos;
                    pos = pHead;
                }
                else if (pos->pNext != NULL)//if the middle element of the linked list
                                            //matches value
                {
                    ___（5）_____ ;
                    pos->pNext->pLast = pos->pLast;
                    Node<T> *temp = pos->pNext;
                    delete pos;
                    pos = temp;
                }
                else if (pos->pNext == NULL)// if the tail element of the linked list
                                            //matches value
                {
                    pos->pLast->pNext = NULL;
                    delete pos;
                }
                length--;
                isDeleted = true;
            }
            else
                pos = pos->pNext;
        }
        return isDeleted;
    }
};
void main()
{
    List<int> list
    list.InsertAtTail(1).InsertAtTail(2).InsertAtTail(6).InsertAtTail(3).InsertAtTail(4);

    cout << "The output of initialization:" << endl;
```

```
    list.traverseList(    );
    cout << endl;

    list.RemoveElement(3);
    cout << "The output after remove 3:" << endl;
    list.traverseList(    );
}
```
Output:

```
The output of initialization:
1
2
6
3
4

The output after remove 3:
1
2
6
4
```

东 南 大 学 考 答 题 纸　ANSWER SHEET

自觉遵守考场纪律　如考试作弊　此答卷无效

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