**Types of questions for the C++ (II) final exam**

There are total 5 types of questions.

### **1. Select the correct options, single choice for each question.**

1. Which of the following preprocessor directives does *not* constitute part of the preprocessor wrapper?
2. #define
3. #endif
4. #ifndef
5. #include

**ANS: d. #include**

### **2. Programming Output （24 scores, each 8 scores）**

1).

#include <iostream>

using namespace std;

class B;

class A{

friend class B;

public:

A(int c);

static void print();

private:

static int day;

};

A::A(int c)

{

day = c;

}

void A::print()

{

cout << " day in class A is " << day << endl;

}

class B{

public:

void setday(A &a,int c);

private:

int value;

};

void B::setday(A &a,int c)

{

a.day = c;

}

int A::day=1;

int main()

{

A::print();

A aa(4);

aa.print();

B bb;

bb.setday(aa,8);

aa.print();

cout << "The size of object aa is "<<sizeof (aa) <<endl;

cout<< "The size of object bb is " <<sizeof (bb)<<endl;

return 1;

}

Output:

### **3. Find the error(s) in each of the following programs, correct the error(s), and explain why they are false.（8 scores）**

This program will create a txt file with name “data.txt” which contains data as following:

Input value 45

45 is 2d in hexadecimal

45 is 55 in octal

45 is 45 in decimal

#include <iostream>

#include <iomanip>

#include <fstream>

using namespace std;

int main(){

ofstream outFile( "data.txt",ios::out);

const int SIZE = 11;

char buffer[SIZE];

cin.getline(buffer,11); // User input: Input value

outFile<<buffer;

int integer;

cin>>integer; // User input: 45

outFile<<" "<<integer<< endl;

outFile <<integer<<" is "<< hex << integer <<" in hexadecimal" << endl;

outFile<< integer<<" is "<< oct << integer << " in octal "<< endl;

outFile<< integer<<" is "<< dec << integer <<" in decimal"<< endl;

return 0;

}

Errors:

### **4. Fill in the Blanks. (10 scores)**

#include <iostream>

using namespace std;

class Array

{

friend ostream &operator<<(ostream &output, Array &a);

public:

Array(int size=5);

Array(Array &);

void setValue(int index, int value);

Array & operator+(Array & a);

~Array();

private:

int number;

int \*v;

};

Array::Array(int size){

number = size;

v = new int[size];

for(int i=0;i<number;i++)

{

v[i]=0;

}

}

// The definition of the copy constructor

Array::Array(Array &a){

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### **5. Programming (20 scores)**

**Hints:**

* + - 1. **Questions 1 from quizs**
      2. **Questions 1-4 from class codes and exercises.**
      3. **Questions 5 from exercises.**