Final Exam

Object-Oriented Programming with C++

Types of questions

- Write the output of the code

- Choice question

- Correct the errors in the programs

- Program Completion

- Coding

Example

- Write the output of the code

```
void f(char c)
  { cout << "f(char)" << c << endl; }
void f(float i)
  { cout << "f(float)" << i << endl; }
template <class T>
void f(T i)
  { cout << "f(T)" << i << endl; }
int main() {
  f('a');
  f(1.0);
  return 0;
}
```

Example

- Write the output of the code

```cpp
class A
{
public:
  A() { }
  virtual void print() {
    cout << "A()" << endl;
  }
};
class B : public A
{
public:
  B() { }
  virtual void print() {
    cout << "B()" << endl;
  }
};
```

```cpp
int main()
{
  A *pA =  new B();
  pA->print();
  return 0;
}
```

Example

- Choice question

During public inheritance, which statement is incorrect concerning the base class objects and the derived class objects? (   )
A. Derived class objects can be assigned to base class objects.
B. Derived class objects can initialize base class references.
C. Derived class objects can access the members of base class.
D. The addresses of derived class objects can be assigned to base class pointers.

Example

- Correct errors

```
char a[3];
const char *const ptr = a;
const char c = 'a';
ptr = &c;
```

Example

- Fill the blanks

Please fill in the suitable code to make the program results **20**

```cpp
#include <iostream.h>
class base
{
  int X;
public:
  void Setnum (int initX) { X=initX; }
  int Getnum() { return X+5; }
};

void main()
{
  _____;
  _____;
  cout<<test.Getnum();
}
```

Example

- Coding

Write a complex number class, which contains constructor, operator=, operator==, and print functions:

```
class complex
{
public:
    complex(float a, float b);
    bool operator== (const complex &rhs);
    complex& operator=(const complex &rhs);
    void print();
}
```