1. An object is an instance of a \_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_ is invoked to create an object.

A. A constructor

B. The main function

C. A function with a return type

D. A function with the void return type

1. Which of the following statements are true?

A. A default no-arg constructor is provided automatically if no constructors are explicitly defined in the class.

B. At least one constructor must always be defined explicitly.

C. Constructors do not have a return type, not even void.

D. Constructors must have the same name as the class itself.

E. Constructors are invoked when an object is created.

1. Analyze the following code:

#include <iostream>

using namespace std;

class A

{

public:

int s;

A(int newS)

{

s = newS;

}

void print()

{

cout << s;

}

};

int main()

{

A a;

a.print();

}

A. The program has a compilation error because class A is not a public class.

B. The program has a compilation error because class A does not have a default constructor.

C. The program compiles and runs fine and prints nothing.

D. The program would compile and run if you change A a to A a(5).

1. Which of the following statements are true?

A. Object names are like array names. Once an object name is declared, it references to an object.

B. Object names cannot be reassigned to reference another object.

C. An object name is a constant, though the contents of the object may change.

D. An object is associated with only one object name.

1. Analyze the following code.

#include <iostream>

using namespace std;

class B

{

public:

B() { };

int k;

};

int main()

{

B b;

cout << b.k << endl;

return 0;

}

A. The program has a compile error because b.k cannot be accessed.

B. The program displays 0.

C. The program displays 1.

D. The program displays unpredictable number.

E. The program has a runtime error because b.k does not have a value.

1. Which of the following statements are true?

A. Use the private keyword to encapsulate data fields.

B. Encapsulating data fields makes the program easy to maintain.

C. Encapsulating data fields makes the program short.

D. Encapsulating data fields helps prevent programming errors.

E. If you don't use the public keyword, the visibility is private by default.

1. Which of the following statements are correct?

A. C++ allows you to pass a parameter of object type in a function by value.

B. C++ allows you to pass a parameter of object type in a function by reference.

C. Passing objects by reference is commonly used because it saves memory.

D. You should define constant reference parameters for objects that are not supposed to be changed in the function.

1. Analyze the following code:

#include <iostream>

#include <string>

using namespace std;

class Name

{

public:

string firstName;

char mi;

string lastName;

Name(string firstName1, char mi1, string lastName1)

{

firstName = firstName1;

mi = mi1;

lastName = lastName1;

}

};

int main()

{

string firstName("John");

Name name(firstName, 'F', "Smith");

firstName = "Peter";

name.lastName = "Pan";

cout << name.firstName << " " << name.lastName << endl;

}

A. The program displays Peter Pan.

B. The program displays John Pan.

C. The program displays Peter Smith.

D. The program displays John Smith.

1. Given the declaration Circle x[10], which of the following statements is correct?

A. x contains an array of ten int values.

B. x contains an array of ten objects of the Circle type.

C. Each element in the array is a Circle object.

D. You cannot assign a new object to the elements in the array, but you can change the contents in each object element.

1. Which of the following statements is correct.

A. int count = 5; int\* x = &count;

B. int count = 5; int x = &count;

C. int count = 5; int& x = &count;

D. int count = 5; int\*\* x = &count;

1. Suppose you declare an array double list[] = {1, 3.4, 5.5, 3.5} and compiler stores it in the memory starting with address 04BFA810. Assume a double value takes eight bytes on a computer. &list[1] is \_\_\_\_\_\_.

A. 04BFA810 B. 04BFA818 C. 1 D. 3.4

1. Suppose you declare an array double list[] = {1, 3.4, 5.5, 3.5}.

\*(list + 1) is same as \_\_\_\_\_\_\_\_.

A. \*list

B. \*list + 1

C. \*list + 2

D. list[0]

E. list[1]

1. Which of the following declaration is correct?

A. int\* pValue = new double; B. int\* pValue = new int;

C. double\* pValue = new double; D. double\* pValue = new int;

1. Suppose list is declared as follows:

int\* list = new int[10];

How should you destroy list?

A. delete list; B. delete\* list;

C. delete [] list; D. delete [] \*list;

1. Which of the following statements are correct?

A. Circle\* pObject = new Circle();

B. Circle pObject = new Circle();

C. Circle\* pObject = new Circle;

D. Circle pObject = Circle();

1. Which of the following statements are true?

A. Every class has a copy constructor with the signature ClassName(const ClassName&).

B. The copy constructor can be used to create an object initialized with another object's data.

C. By default, the copy constructor simply copies each data field in one object to its counterpart in the other object.

D. By default, the copy constructor performs a shallow copy.

1. If you define the swap function as follows:

template<typename T>

void swap(T& var1, T& var2)

{

T temp = var1;

var1 = var2;

var2 = temp;

}

You can invoke swap using \_\_\_\_\_\_.

A. swap(1, 2)

B. int v1 = 1; int v2 = 2; swap(v1, v2);

C. int v1 = 1; int v2 = 2; swap(&v1, &v2);

D. int v1 = 1; double v2 = 2; swap(v1, v2);

1. Suppose you define

template<typename T = int>

class Stack

{

Stack();

...

};

Which of the following statements are correct?

A. Stack<double> s; B. Stack<int> s;

C. Stack<> s; D. Stack s;

E. Stack<int, double> s;

1. What is wrong in the following code?

#include <iostream>

#include <vector>

using namespace std;

int main()

{

vector<int> v;

cout << v[0];

return 0;

}

A. The program has a compile error on v[0].

B. The program has a runtime error on v[0], because the vector is empty.

C. The program has a compile error on vector<int> v.

D. The program has a runtime error on vector<int> v.

1. The signature for the < operator function for comparing two Rational objects is \_\_\_\_\_\_\_\_\_\_.

A. bool operator<(Rational& secondRational)

B. bool <operator(Rational& secondRational)

C. bool operator<(Rational secondRational)

D. bool operator(<)(Rational& secondRational)

1. What is the output of the following code?

#include <iostream>

using namespace std;

class ParentClass

{

public:

int id;

ParentClass(int id)

{

this->id = id;

}

void print()

{

cout << id << endl;

}

};

class ChildClass: public ParentClass

{

public:

int id;

ChildClass(int id): ParentClass(1)

{

this->id = id;

}

};

int main()

{

ChildClass c(2);

c.print();

return 0;

}

A. 0

B. 1

C. 2

D. Nothing

1. Suppose class A is derived from B and both A and B have no-arg constructors. To invoke B's constructor from A, use \_\_\_\_\_\_\_\_.

A. A(): B() { ... } B. A(): { B(); ... }

C. B(): A() { ... } D. B(): { A(); ... }

1. If you enter 1 0, what is the output of the following code?

#include <iostream>

using namespace std;

int main()

{

// Read two integers

cout << "Enter two integers: ";

int number1, number2;

cin >> number1 >> number2;

try

{

if (number2 == 0)

throw number1;

cout << number1 << " / " << number2 << " is "

<< (number1 / number2) << endl;

cout << "C" << endl;

}

catch (int e)

{

cout << "A" << endl;

}

cout << "B" << endl;

return 0;

}

A. A B. B C. C D. AB

1. Fill in the code to complete the following function for computing a Fibonacci number.

long fib(long index)

{

if (index == 0) // Base case

return 0;

else if (index == 1) // Base case

return 1;

else // Reduction and recursive calls

return \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

}

A. fib(index - 1)

B. fib(index - 2)

C. fib(index - 1) + fib(index - 2)

D. fib(index - 2) + fib(index - 1)