Review answers

Start date:	5 minutes ago
Complete date:	A moment ago
Question 1:	Which statement is false about an abstract class? ◯ Abstract classes cannot be instantiated. ✓ Abstract classes can only have function declarations, no function implementations. ◯ Abstract classes enable us to work uniformly with a set of related classes. ◯ Abstract classes can contain member data.
Question 2:	Which statement is true about aggregation (open diamond shape in UML) and composition (filled diamond shape in UML) ◯ With aggregation the lifetime of the embedded object is the same as the 'outer' object while with composition the lifetime can be different. ◯ Aggregation embeds multiple objects while composition only embeds one object. ✓ With composition the lifetime of the embedded object is the same as the 'outer' object while with aggregation the lifetime can be different. ◯ There is no difference between aggregation and composition.
Question 3:	Which statement is true about destructors and inheritance? ◯ The system provided destructor is always called correctly. ✓ Destructors must be virtual so that derived class objects in a base class variable will be deleted correctly. ◯ Destructors must be virtual because the canonical header file requires that. ◯ Destructors must be virtual so that the base class destructor is called when a derived class object is removed from memory.
Question 4:	What is the output of the following program?

C++:

```
class A
{
private:
  virtual int GetValue() { return 10; }

public:
  int Calculate() { return GetValue()*1.5; }
};

class B: public A
{
private:
  virtual int GetValue() { return 20; }
};

int main()
```

- ○ 30, 30
- ○ This program does not compile.
- ✓ 15, 30
- ○ 15, 15

Question 5: What is the output of the following program?

C++:

```
class A
{
private:
  int m_da;

public:
  A(int da): m_da(da) {}
  int GetA() { return m_da; }
  A& operator = (const A& source)
  { m_da=source.m_da; return *this; }
};

class B: public A
{
private:
  int m_db;
```

- ✓ 10, 40
- ○ 30, 20

◯ 30, 40
◯ 10, 20

Question 6: What statement is true about function overriding?

◯ To override a function, the number of arguments or the type of the arguments must be different.
✓ With function overriding you can still call the overridden base class function from the derived class.
◯ Function overriding adds extra functionality to the overridden function.
◯ Function overriding is not possible with operators.

Question 7: What is the output of the following program?

C++:

```
1  class A
2  {
3  public:
4    virtual std::string F() = 0;
5  };
6
7  class B: public A
8  {
9  public:
10   std::string F() { return "B"; }
11 };
12
13 int main()
14 {
15   A a; B b;
16   A* ap=&b;
```

◯ B,
✓ This code does not compile.
◯ B, 0
◯ B, B

Question 8: Which statement is false about aggregation?

✓ Aggregation is a special kind of inheritance.
◯ With aggregation you create an object that consists of one or more other objects.
◯ Aggregation can hide the functionality of the aggregated object.

	◯ Aggregation is often combined with delegation to delegate functionality to another object.
Question 9:	What statement is true about inheriting operators? ◯ When you don't create an assignment operator in the derived class, assigning two derived class objects will only copy the base class data. ◯ All operators are inherited. ◯ Operators from the base class cannot be overridden in the derived class. ✓ The equal compare operator is inherited but it will only compare the base class data.
Question 10:	Which statement is false about interfaces? ✓ Interfaces are allowed to provide default implementations. ◯ There is not interface construct in C++ but they can be emulated using abstract classes/functions. ◯ Interfaces can be used instead of inheritance when there is no 'ISA' relation. ◯ A function working with an interface can work with any set of unrelated classes as long as they implement that interface.
Score:	10 (100.00%)
Pass/Fail:	Passed