Q. 1 True or False

1. It is not recommended to make the function inline when the function is return value . (F)
2. The child must inherit all parent member. (T)
3. The class contains pure virtual function is called abstract class (T)
4. The virtual function must be overridden in any Derived class. (F)
5. A pointer to a base class can point to objects of a derived class. (T)

Q. 2 Select the correct answer(s)

1. A constructor is:
   a) A member function initialize object in memory.
   b) A member function called automatically when an object is being created in the memory.
   c) A private member function can never be called.
   d) None of the above.

2. Consider the following code:
```
void main()
{
    int *p;
    p=new int[5];
}
```
The above code:
   a) Allocate for an integer that is not initialized.
   b) Allocate for an array of integers of 5 elements that is not initialized.
   c) Allocate for an integer that is initialized by 5.
   d) Allocate for an array of integers where all its elements is initialized by 5.

3. The constructor of derived class called automatically: Base

   a) When any member function of the derived class called.
   b) After the constructor of the derived class started.
   c) Before the constructor of the derived class started.
   d) We do not know when exactly will be started.

5. Virtual functions allow you to
   a. create an array of type pointer-to-base class that can hold pointers to derived classes.
   b. create functions that can never be accessed.
   c. group objects of different classes so they can all be accessed by the same function code.
   d. use the same function call to execute member functions of objects from different classes.

6. A static function
   e. should be called when an object is destroyed.
   f. is closely connected to an individual object of a class.
   g. can be called using the class name and function name.
   h. is used when a dummy object must be created.

7. The protected members access specifier for the class user is equivalent to:
   a) public member
   b) private member
   c) global variable
   d) local variable

Q. 3 Design and implement the following functions using C Programming Language

In the Geometry Science, the Circle, Triangle, Rectangle are Shapes. Each Shape consists of 2 dimensions, and the area of each shape is defined by the following formula : "Area = dimension1 * dimension2 * const".
The const depends on the Shape itself

1. Extract the classes from the last sentences
2. state their relation between them
3. Design and Implement a new class named PICTURE that consists of 5 shapes (Circle and/or Triangle and/or Rectangle)
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Best Wishes