北京航空航天大学 软件学院

答题纸

学号：

姓名：

一、选择题（15×2＝30）

1. In C#, which of the following types is value type?

A. Class　B. Enum　C. Interface　D. Delegate

2. Which .NET type does the C# keyword "int" map to?

A. System.Int16　B. System.Int32　C. System.Int64　D. System.Int128

3. Which of the statements is correct to declare a two-dimensional array in C#?

A. int[,] myArray;　B. int myArray[][];

C. int[2] myArray;　D. System.Array[2] myArray;

4. Which of the following is a wrong function definition?

A. public virtual void Func()　B. public abstract void Func()

C. public const void Func()　D. public extern void Func()

5. Which keyword is used to allocate memory for an instance of a class, as well as to pass arguments to a constructor of that class?

A. alloc　B. new　C. delete　D. malloc

6. A property's _____ accessor enables a client to modify the value of the instance variable associated with the property.

A. base　B. this　C. get　D. set

7. What is the default access level for class members in C#?

A. protected　B. public　C. private　D. internal

8. If a method is marked as `Protected` who can access it?

A. Anywhere that the application has a reference to an object of that base class.

B. Only methods that are in the same class.

C. Classes in the declaring assembly.

D. Classes derived from the declaring class.

9. Which of the following statement is **wrong**?

A. Abstract methods do not have an implementation in its declaring class.

B. Abstract methods are implicitly virtual.

C. If a class has abstract methods (declared or inherited) it must be abstract itself.

D. If a base class declares an abstract method, a derived class must implement that method.

10. Which of the following statements will cause a compiler error?

A.
```
class A {
      ...
}
class B : A {
   public B(int x) {...}
}
B b = new B(3);
```

B.
```
class A {
   public A() {...}
}
class B : A {
   public B(int x) {...}
}
B b = new B(3);
```

C
```
class A {
   public A(int x) {...}
}
class B : A {
   public B(int x) {...}
}
B b = new B(3);
```

D.
```
class A {
   public A(int x) {...}
}
class B : A {
   public B(int x):base(x){...}
}
B b = new B(3);
```

11. Which of the following statements is **wrong**?

A. Classes may derive from multiple base classes.

B. Interface members must not be static.

C. Interfaces can inherit from other interfaces.

D. Classes and structs may implement multiple interfaces.

12. In C#, if you want to change a thread's state from suspended into running, what method you should call?

A. Start B. Suspend C. Resume D. Interrupt

13. The following class is often called_____.

```
class Buffer<Element> {
      private Element[] data;
      public Buffer(int size) {...}
      public void Put(Element x) {...}
      public Element Get() {...}
}
```

A. Abstract Class B. Virtual Class C. Concrete Class D. Generic Class

14. If you want to select all the numbers which are greater than 1000 in an int array, which of the

15. The statement `f = delegate (int x) { return x + 1; };` is equivalent to which of the following statements?

A. f = x => x; B. f = (x, y) => x+1; C. f => x+1; D. f = x => x + 1;

二、判断题（2×10＝20）

1. In a switch statement, every statement sequence in a case clause must be terminated with *break* (or *return*, *goto*, *throw*).
2. Structs can be inherited.
3. If no constructor was declared in a class, the compiler generates a default constructor which has no parameter.
4. A *using* statement is not required when one class uses another class in the same namespace.
5. A property declaration must contain both a *get* accessor and a *set* accessor.
6. All methods in an abstract class must be declared as abstract methods.
7. Exceptions always are handled in the method that initially detects the exception.
8. Method Equals and the equality operator work the same for strings.
9. A finally block is optional after a try block that does not have any corresponding catch blocks.
10. In Windows Form application, a Label control is only used to display some information.

三、填空题（2×10＝20）

1. How to convert a string type variable *s* into int type and stored it into an int variable named *num*?

_____

Convert.ToInt32(x)

static

2. A(n) _____ variable represents classwide information that is shared by all the objects of the class.

Exception

3. In C#, all exception classes are derived from_____ class.

this

4. A constructor may call another constructor with the keyword _____.

5. Suppose you have a double array called *numbers*, please sum all the elements of the array, using foreach statement.

_____

_____

_____

```
double sum=0;
foreach(double x in numbers)
{
  sum=sum+x;
}
```

6. What is the base class for all C# objects?_____

Object

装箱

7. In C#, converting a value type to a reference type is called _____, and converting a reference type to a value type is called_____.

拆箱

8. In C#, _____ is used to retrieve specific element in an enumerable object directly?

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9. What is the output of the following program when using `new B()` to create an instance of B ?

```
using System;
class A {
    public A() {
        PrintFields();
    }
    public virtual void PrintFields(){ }
}
class B : A {
    int x = 1;
    int y;
    public B(){
        y = -1;
    }
    public override void PrintFields(){
        Console.WriteLine("x = {0}, y = {1}", x, y);
    }
}
```

x = 1, y = 0

10. Please fill in the blank.

```
namespace test
{
    public delegate void OnDBOperate();
    public class UserControlBase : System.Windows.Forms.UserControl
    {
        public event OnDBOperate OnNew;
        private void toolBar_ButtonClick(object sender,
                System.Windows.Forms.ToolBarButtonClickEventArgs e){
            if(e.Button.Equals(BtnNew)) {
                //Please write code to call OnNew events
                _____
                _____
            }
        }
    }
}
```

```
if(OnNew!=null)
  OnNew();
```

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四、简答题（6×5＝30）

1. Please give a brief description about the difference and connection between the classes and structs.

1.结构体是值类型的，而类是引用类型的
2.结构体和类都有构造器，但是不能为结构体声明默认构造器，而类可以声明默认构造器
3.结构体的实例存储在栈上，而类的实力存储在堆上
4.如果声明自己的构造器，对于结构体来说编译器仍会生成默认构造器，而类则不会
5.如果在构造器中不初始化一个字段，那么对于结构体来说，编译器不会自动初始化，而类会
6.结构体声明实例字段的同时不可以初始化，而类可以。
7.结构不能从另外一个结构或者类继承，本身也不能被继承。而类两者都可以
8.结构和类都能继承接口

2. Please give a brief description about the difference and connection between the classes and interfaces.

异：
不能直接实例化接口。
接口不包含方法的实现。
接口、类和结构可从多个接口继承。但是C#只支持单继承：类只能从一个基类继承实现。
类定义可在不同的源文件之间进行拆分。
同：
接口、类和结构可从多个接口继承。
接口类似于抽象基类：继承接口的任何非抽象类型都必须实现接口的所有成员。
接口可以包含事件、索引器、方法和属性。
一个类可以实现多个接口。

3. What is the difference between Overloading and Overriding?

方法重载是一个类中定义了多个方法名相同,而他们的参数的数量不同或数量相同而类型和次序不同,则称为方法的重载(Overloading)
方法重写是在子类存在方法与父类的方法的名字相同,而且参数的个数与类型一样,返回值也一样的方法,就称为重写(Overriding)
方法重载是一个类的多态性表现,而方法重写是子类与父类的一种多态性表现.

4. What is the difference between virtual method and abstract method?

1.虚方法必须有实现部分，并为派生类提供了覆盖该方法的选项 抽象方法没有提供实现部分，抽象方法是一种强制派生类覆盖的方法，否则派生类将不能被实例化
2.抽象方法只能在抽象类中声明，抽象方法必须在派生类中重写，虚方法不是也不必要重写。其实如果类包含抽象方法，那么该类也是抽象的，也必须声明为抽象的
3.抽象方法必须在派生类中重写，这一点跟接口类似，虚方法不必。抽象方法不能声明方法实体而虚方法可以；包含抽象方法的类不能实例化，而包含虚方法的类可以实例化
4.抽象方法只有声明没有实现，需要在子类中实现；虚拟方法有声明和实现，并且可以在子类中覆盖，也可 以不覆盖使用父类的默认实现

5. What is the difference between managed code and unmanaged code?

托管代码被编译成MSIL后在.net framework下运行，同操作系统底层的交互都交给.net framework来处理。
非托管代码就是脱离了.net framework的管制，直接同底层API打交道，自己管理自己的内存和安全机制等东西。而托管代码就不管这些，全都由.net framework去完成。