

## Question 1 (5 points)

The following code will not compile as is. It is missing a line that needs to be inserted where the "//Missing Line" comment is. Which line of code will fix the compile error?

Java	C#
<pre>class House {     public int square_footage;     public int stories;     public House() {         square_footage=0;         stories=1;     } } class Main {     public static void main(String[] args) {         House h1;         //Missing Line         h1.square_footage=1;     } }</pre>	<pre>class House {     public int square_footage;     public int stories;     public House() {         square_footage=0;         stories=1;     } } class MainClass {     public static void Main (string[] args) {         House h1;         //Missing Line         h1.square_footage=1;     } }</pre>

Question 1 options:

new House(h1);

h1 = new House();

h1.stories=1;

h1.House();

## Question 2 (5 points)

Which of the following blocks of code will successfully ask a user for a number, multiply that number by 2, and print the result

Question 2 options:

Java	C#
<pre>import java.util.Scanner; System.out.println("Enter a number to be doubled:"); Scanner myscanner = new Scanner(System.in); String num=myscanner.NextLine(); num*=2; System.out.println("Your number doubled is "+num);</pre>	<pre>Console.WriteLine("Enter a number to be doubled:"); string num=Console.ReadLine(); num*=2; Console.WriteLine("Your number doubled is "+num)</pre>

Java	C#
<pre>import java.util.Scanner; System.out.println("Enter a number to be doubled:"); Scanner myscanner = new Scanner(System.in); int num=myscanner.nextInt(); num*=2; System.out.println("Your number doubled is "+num);</pre>	<pre>Console.WriteLine("Enter a number to be doubled:"); string answer=Console.ReadLine(); int num=Int32.Parse(answer); num*=2; Console.WriteLine("Your number doubled is "+num);</pre>

Java	C#
<pre>import java.util.Scanner; int num; System.out.println("Enter a number to be doubled:"); Scanner myscanner = new Scanner(System.in); myscanner.nextInt(num); num*=2; System.out.println("Your number doubled is "+num);</pre>	<pre>string answer Console.WriteLine("Enter a number to be doubled:"); Console.ReadLine(answer); int num=Int32.Parse(answer); num*=2; Console.WriteLine("Your number doubled is "+num);</pre>

### Question 3 (5 points)

What does the following code output?

Java	C#
<pre>int x=7; int y=10;  if((x&gt;5) &amp;&amp; (y&gt;12)) {     System.out.println("A"); } else if((x&lt;7)    (y&gt;10)) {     System.out.println("B"); } else if((x&lt;=14) &amp;&amp; (y&gt;2)) {     System.out.println("C"); } else {     System.out.println("D"); }</pre>	<pre>int x=7; int y=10; if((x&gt;5) &amp;&amp; (y&gt;12)) {     Console.WriteLine("A"); } else if((x&lt;7)    (y&gt;10)) {     Console.WriteLine("B"); } else if((x&lt;=14) &amp;&amp; (y&gt;2)) {     Console.WriteLine("C"); } else {     Console.WriteLine("D"); }</pre>

Question 3 options:

A

B

C

D

## Question 4 (5 points)

What is the output of the following code:

Java	C#
<pre>boolean a=false; boolean b=true; boolean c=false; boolean d=true;  if((a) &amp;&amp; (b    c) &amp;&amp; d) {     System.out.println("Yes"); } else {     System.out.println("No"); }</pre>	<pre>bool a=false; bool b=true; bool c=false; bool d=true;  if((a) &amp;&amp; (b    c) &amp;&amp; d) {     Console.WriteLine("Yes"); } else {     Console.WriteLine("No"); }</pre>

Question 4 options:

This code does not compile

Yes

No

## Question 5 (5 points)

The following code will compile and output 8?

Java	C#
<pre>class Stuff {     public int x=7; } class Main {     public static void main(String[] args) {         Stuff.x=8;         System.out.println(Stuff.x);     } }</pre>	<pre>class Stuff {     public int x=7; } class MainClass {     public static void Main (string[] args) {         Stuff.x=8;         Console.WriteLine(Stuff.x);     } }</pre>

Question 5 options:

True

False

## Question 6 (5 points)

What is the output of the following code?

Java	C#
<pre>import java.util.ArrayList; class Main {     public static void main(String[] args) {         ArrayList&lt;Integer&gt; myNumbers = new ArrayList&lt;Integer&gt;();         myNumbers.add(10);         myNumbers.add(20);         myNumbers.add(30);         myNumbers.add(40);         int num=0;         for(int x : myNumbers) {             num+=x;         }         System.out.println(num);     } }</pre>	<pre>using System.Collections; class MainClass {     public static void Main (string[] args) {         ArrayList myNumbers = new ArrayList();         myNumbers.Add(10);         myNumbers.Add(20);         myNumbers.Add(30);         myNumbers.Add(40);         int num=0;         foreach(int x in myNumbers) {             num+=x;         }         Console.WriteLine(num);     } }</pre>

Question 6 options:

0

40

100

150

## Question 7 (5 points)

The following code will compile and output 8?

Java	C#
<pre>class Stuff {     public static int x=7;     public static void do_stuff() {         x++;         System.out.println(x);     } } class Main {     public static void main(String[] args) {         Stuff.do_stuff();     } }</pre>	<pre>class Stuff {     public static int x=7;     public static void do_stuff() {         x++;         Console.WriteLine(x);     } } class MainClass {     public static void Main (string[] args) {         Stuff.do_stuff();     } }</pre>

Question 7 options:

True

False

## Question 8 (5 points)

What is the output of the following code?

Java	C#
<pre>class Main {     public static void dostuff(int x, int y) {         System.out.println("Hi from dostuff 1");     }     public static void dostuff(int x) {         System.out.println("Hi from dostuff 2");     }     public static void dostuff(char x) {         System.out.println("Hi from dostuff 3");     }     public static void dostuff(boolean x) {         System.out.println("Hi from dostuff 4");     }     public static void main(String[] args) {         dostuff(7);         dostuff('c');         dostuff(true);     } }</pre>	<pre>class MainClass {     public static void dostuff(int x, int y) {         Console.WriteLine("Hi from dostuff 1");     }     public static void dostuff(int x) {         Console.WriteLine("Hi from dostuff 2");     }     public static void dostuff(char x) {         Console.WriteLine("Hi from dostuff 3");     }     public static void dostuff(bool x) {         Console.WriteLine("Hi from dostuff 4");     }     public static void Main (string[] args) {         dostuff(7);         dostuff('c');         dostuff(true);     } }</pre>

Question 8 options:

Hi from dostuff 2  
Hi from dostuff 3  
Hi from dostuff 4

Hi from dostuff 1  
Hi from dostuff 2  
Hi from dostuff 3

Hi from dostuff 2  
Hi from dostuff 2  
Hi from dostuff 2

This produces a compile error saying something like dostuff is already defined.



## Question 9 (5 points)

Given the following code, which of the below definitions for a child class ChocolateBar is valid:  
[Hint: Pay attention to the Access Modifiers of the attributes in CandyBar]

Java	C#
<pre>class CandyBar {     private double cost;     private String manufacturer;     private String name;      public CandyBar(double c, String m, String n) {         cost=c;         manufacturer=m;         name=n;     }      public double getcost() {         return cost;     } }</pre>	<pre>class CandyBar {     private double cost;     private string manufacturer;     private string name;     public CandyBar(double c, string m, string n) {         cost=c;         manufacturer=m;         name=n;     }     public double getcost() {         return cost;     } }</pre>

Question 9 options:

Java	C#
<pre>class ChocolateBar extends CandyBar {     private String chocolatetype;     public ChocolateBar(double c, String m, String n) {         cost=c;         manufacturer=m;         name=n;         chocolatetype="Milk";     } }</pre>	<pre>class ChocolateBar : CandyBar {     private string chocolatetype;     public ChocolateBar(double c, string m, string n) {         cost=c;         manufacturer=m;         name=n;         chocolatetype="Milk";     } }</pre>

Java	C#
<pre>class ChocolateBar extends CandyBar {     private String chocolatetype;     public ChocolateBar(double c, String m, String n) {         super(c,m,n);         chocolatetype="Milk";     } }</pre>	<pre>class ChocolateBar : CandyBar {     private string chocolatetype;     public ChocolateBar(double c, string m, string n) : base(c,m,n) {         chocolatetype="Milk";     } }</pre>

Java	C#
<pre>class ChocolateBar extends CandyBar {     private String chocolatetype;     public ChocolateBar(double c, String m, String n) {         super(m);         chocolatetype="Milk";     } }</pre>	<pre>class ChocolateBar : CandyBar {     private string chocolatetype;     public ChocolateBar(double c, string m, string n) : base(m) {         chocolatetype="Milk";     } }</pre>

Java	C#
<pre>class ChocolateBar extends CandyBar {     private String chocolatetype;     public ChocolateBar(double c, String m, String n) {         super(m);         chocolatetype="Milk";     } }</pre>	<pre>class ChocolateBar : CandyBar {     private string chocolatetype;     public ChocolateBar(double c, string m, string n) : base(m) {         chocolatetype="Milk";     } }</pre>

## Question 10 (5 points)

What is the output of the following code?

Java	C#
<pre>class A {     public void do_it() {         System.out.println("A");     } } class B extends A {     @Override     public void do_it() {         System.out.println("B");     } } class Main {     public static void main(String[] args) {         A myClass=new B();         myClass.do_it();     } }</pre>	<pre>class A {     public virtual void do_it() {         Console.WriteLine("A");     } } class B : A {     public override void do_it() {         Console.WriteLine("B");     } } class MainClass {     public static void Main (string[] args) {         A myClass=new B();         myClass.do_it();     } }</pre>

Question 10 options:

A

B

A

B

This code does not compile

## Question 11 (5 points)

Why does the following code not compile?

Java	C#
<pre>public class XYZ {     private int myNum;      public XYZ() {         myNum=0;     }      public XYZ(int n1) {         myNum=n1;     } }</pre> <pre>public class ABC extends XYZ {     private int num2;      public ABC() {         myNum=0;         num2=0;     }      public ABC(int n1) {         myNum=n1;         num2=n1*2;     } }</pre> <pre>class Main {     public static void main(String[] args) {         ABC myABC = new ABC();     } }</pre>	<pre>public class XYZ {     private int myNum;      public XYZ() {         myNum=0;     }      public XYZ (int n1) {         myNum = n1;     } }</pre> <pre>public class ABC : XYZ {     private int num2;      public ABC() {         myNum=0;         num2=0;     }      public ABC (int n1) {         myNum = n1;         num2 = n1*2;     } }</pre> <pre>class MainClass {     public static void Main (string[] args) {         ABC myABC= new ABC();     } }</pre>

Question 11 options:

myNum is defined as private in XYZ and as such is inaccessible in ABC.

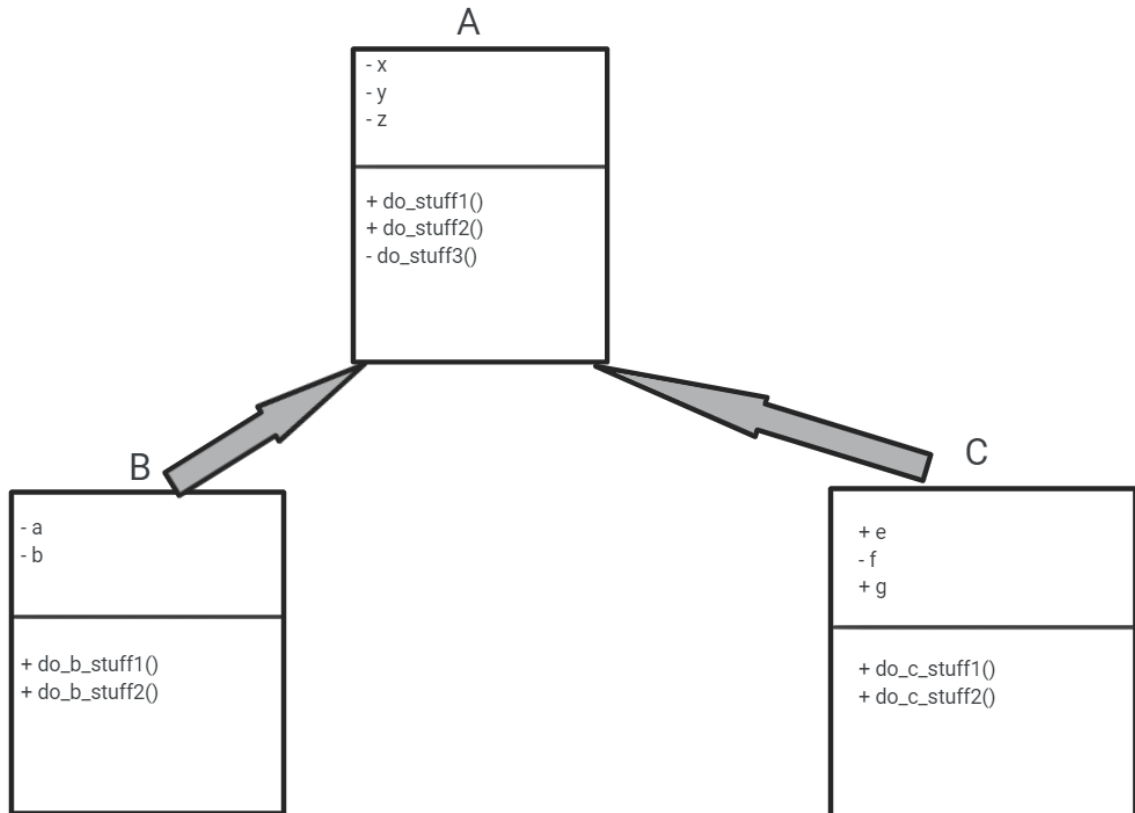
class ABC cannot have private attributes because it's inheriting from XYZ

class ABC is not allowed to inherit from class XYZ

You cannot instantiate an object of type ABC, you can only instantiate objects of type XYZ

## Question 12 (5 points)

According to the following UML, if a new object of B is created in main as follows:  
B myB = new B();  
Which of the following statements is **NOT** valid in main?



Question 12 options:

myB.do\_b\_stuff1();

myB.do\_b\_stuff2();

myB.do\_stuff1();

myB.do\_stuff3();

## Question 13 (5 points)

Given the following interface, which of the following classes will compile without error?

```
interface IMove {  
    public void moveForward(int speed);  
}
```

A.

Java	C#
<pre>class MoveCharacter implements IMove {     public int position;      public void moveForward(int speed) {         position+=speed;     } }</pre>	<pre>class MoveCharacter : IMove {     public int position;      public void moveForward(int speed) {         position+=speed;     } }</pre>

B.

Java	C#
<pre>class MoveCharacter implements IMove {     public int position;      public void moveBackward(int speed) {         position-=speed;     } }</pre>	<pre>class MoveCharacter : IMove {     int position;      public void moveBackwards(int speed) {         position-=speed;     } }</pre>

C.

Java	C#
<pre>abstract class MoveCharacter implements IMove {     public int position;      abstract public void moveForward(int speed);      public void moveBackward(int speed) {         position-=speed;     } }</pre>	<pre>abstract class MoveCharacter : IMove {     public int position;      abstract public void moveForward(int speed);      public void moveBackwards(int speed) {         position-=speed;     } }</pre>

D.

Java	C#
<pre>class MoveCharacter implements IMove {     private int position;      public int moveForward(int speed) {         position+=speed;     } }</pre>	<pre>class MoveCharacter : IMove {     private int position;      public int moveForward(int speed) {         position+=speed;     } }</pre>

1. Only A
2. A & B
3. A & C
4. Only C
5. B & D

## Question 14 (5 points)

Given the following class definitions, which of the following lines is a valid example of Polymorphism?

Java	C#
<pre>class Animal {     public int numLegs; } class Dog extends Animal {     public String name;      public Dog(String newName)     {         name=newName;     } }</pre>	<pre>class Animal {     public int numLegs; } class Dog : Animal {     public string name;      public Dog(string newName)     {         name=newName;     } }</pre>

- A. 

```
Dog[] myDogs = new Dog[5];
myDogs[0]=new Animal();
```
- B. 

```
Dog[] myDogs = new Dog[5];
myDogs[0]=new Dog("Molly");
```
- C. 

```
Animal[] myAnimals = new Animal[5];
myAnimals[0]=new Dog("Molly");
```
- D. 

```
Animal[] myAnimals = new Animal[5];
myAnimals[0]=new Animal();
```

## Question 15 (5 points)

What is the output from the following code segment?

```
class MyNum {
    public int x=3;
}

class MainClass {
    public static int method2(MyNum p1) {
        p1.x++;
        return p1.x;
    }

    public static int method1(int p1) {
        p1++;
        return p1;
    }

    public static void Main (string[] args) { //For java assume main (String[] args)
        int a = 10;
        int b = method1(a);
        PRINT("a: "+a+" b: "+b); //Assume System.out.println or Console.WriteLine

        MyNum obj1 = new MyNum();
        int c = method2(obj1);
        PRINT("c: "+c+" x: "+obj1.x); //Assume System.out.println or Console.WriteLine
    }
}
```



## Question 16 (5 points)

What is the output of the following code?

Java	C#
<pre>class A {     public void method1() {         System.out.println("1");     } }  class B extends A {     @Override     public void method1() {         System.out.println("2");     } }  class Main {     public static void main(String[] args)     {         A obj1=new B();         obj1.method1();     } }</pre>	<pre>class A {     public virtual void method1() {         Console.WriteLine("1");     } }  class B : A {     public override void method1() {         Console.WriteLine("2");     } }  class Program {     public static void Main (string[] args)     {         A obj1=new B();         obj1.method1();     } }</pre>

## Question 17 (5 points)

Which of the following statements are valid?

- A constructor can return a integer
- A constructor can return a char
- A constructor cannot return anything
- A constructor can return a void

## Question 18 (5 points)

What does the following code output?

Java	C#
<pre>char letters[]=new char[5]; letters[0]='a'; letters[1]='b'; letters[2]='c'; letters[3]='d'; letters[4]='e'; String x=""; for(int i=4;i&gt;=2;i--) {     x+=letters[i]; } System.out.println(x);</pre>	<pre>char[] letters=new char[5]; letters[0]='a'; letters[1]='b'; letters[2]='c'; letters[3]='d'; letters[4]='e'; String x=""; for(int i=4;i&gt;=2;i--) {     x+=letters[i]; } Console.WriteLine(x);</pre>

Question 18 options:

abcd

edcb

ed

edc

## Question 19 (5 points)

What does the following code output?

Java	C#
<pre>int x=10; while(x&gt;2) {   x-=2;   System.out.println(x); }</pre>	<pre>int x=10; while(x&gt;2) {   x-=2;   Console.WriteLine(x); }</pre>

Question 19 options:

8  
6  
4  
2

10  
8  
6  
4  
2  
0

8  
6  
4  
2  
0

10  
8  
6  
4  
2  
0

## Question 20 (5 points)

A method with a return type of void may still have a return statement in it's code.

Question 20 options:

True

False