

**Answer the following questions:**

**Question one: (9 Marks)**

**a) What is the output of the following program? (2 mark)**

```
public class AnswerExpensiveOrNo
{
    public static void main(String args[]) {
        boolean x = false;
        int y=20, z=30, m=0;
        if (x=true) {
            System.out.println("The value of x is:" + x);
        }
        m=(y>z) ? y:z;
        System.out.println("The value of m is" + m);
    } }
```

The value of m is 30

**b) What is the output of the following program? (2 mark)**

```
public class MyfinalClass
{
    final int x=40;
    public static void main(String args[]) {
        MyfinalClass myobj=new MyfinalClass();
        System.out.println("The value of x is:" + myobj.x);
        myobj.x=30;
        System.out.println("The value of x is:" + myobj.x);
    } }
```

Compiler error

**c) What is the output of the following program? (3 mark)**

```
class MyClassOperator
{
```

```

protected static char x= ' ';
public MyClassOperator(){ x='+';MyMainClassOperator();}
public MyClassOperator(char y){ x=y; y=x;MyMainClassOperator();}
public void MyMainClassOperator(){
    if (x == '+')
        System.out.println(" operator +");
    else if (x == '-')
        System.out.println(" operator -");
    else
        System.out.println(" no operator to do");
}
}
class ImyClassOperator extends MyClassOperator
{
    char z='-';
    public void ImyClassOperator(){x='-';}
}
public class MyClassTest {
    public static void main(String args[]) {
        System.out.println ("Welcome to Our Operator Program");
        ImyClassOperator obj=new ImyClassOperator();
        System.out.println ("bye bye");
    }
}

```

operator +  
bye bye

**d) What is the output of the following program? (2 mark)**

```

class Vehicle
{
    int maxspeed=140;
}
class Car extends Vehicle

```

```

{
    int maxspeed=170;
    public void Display(){System.out.println("the maximum speed is " +
super.maxspeed);}
}
public class MyClassTest {
    public static void main(String args[]) {
        Car obj=new Car();
        obj.Display();
    }
}

```

the maximum speed is 140

**Question two (3 Marks) TRUE or FALSE:**

- a) A file may contain as many classes as you like as long as each of these classes is declared public. **False**
- b) Polymorphism enables objects of different classes that are related by a class hierarchy to be processed generically. **True**
- c) Protected members are accessible only to methods of their class and to methods of their subclasses **False (and package)**
- d) An overloaded method has the same name as in the superclass, but a different signature. **True**
- e) To use an interface, a concrete class must declare each interface method with the signature specified in the interface declaration.
- f) At most one package declaration can appear in a source file, and the package keyword creates a package. **False**

**Question three: (5 Marks):**

- a) Insert the missing parts to handle the error in the code below:**

```

try {
    int[] myNumbers = {1, 2, 3};
    System.out.println(myNumbers[10]);
}
catch (Exception e) {

    System.out.println("Something went wrong.");
}

```

**b) Insert the missing parts to create a two-dimensional array:**

```
int[][] myNumbers = { {1, 2, 3, 4}, {5, 6, 7} };
```

**c) Fill in the blanks:**

Subclass constructors can call superclass constructors via the keyword `super`

**d) Follow the comments to insert the missing parts of the code below:**

```
// Create a checkAge() method with an integer variable called age
static void checkAge(int age) {

    // If age is less than 18, print "Access denied"
    if (age < 18) {

        System.out.println("Access denied");
    }
    // If age is greater than 18, print "Access granted"
    else {

        System.out.println("Access granted");
    }
}

public static void main(String[] args) {
    // Call the checkAge method and pass along an age of 20
    checkAge(20);
}
```

#### **Question four: (5 Marks) COMPILER ERRORS:**

The following code includes ten compiler errors. Circle the line number to the left of each line that contains a compiler error and give a brief reason for the compiler error in the column to the right. There is a maximum of one error on any given line

#	Code	Brief Explain
1	<b>import java.util.Scanner;</b>	
2	<b>/* This program indicates if a triangle is a</b>	
3	<b>valid triangle or not. A triangle is a</b>	
4	<b>valid triangle, if the sum of any of it's</b>	
5	<b>two sides is greater than the third one.</b>	
6	<b>/*</b>	
7	<b>abstract class CTraingle{</b>	
8	<b>abstract void read_numbers();</b>	
9	<b>boolean traingle (double a, double b,double z);</b>	
10	<b>}</b>	
11	<b>class CITraingle implements CTraingle{</b>	
12	<b>private double x1,y2;</b>	
13	<b>public double y1,z1;</b>	
14	<b>public void read_numbers(double a, double b,double z) {</b>	
15	<b>Scanner keyboard=new Scanner(System.in);</b>	
16	<b>System.out.println("Enter the first number:");</b>	
17	<b>x1= keyboard.nextInt();</b>	
18	<b>System.out.println("Enter the first number:");</b>	
19	<b>y1=keyboard.nextDouble();</b>	
20	<b>System.out.println("Enter the first number:");</b>	
21	<b>z1=keyboard.nextDouble();</b>	
22	<b>}</b>	
23	<b>public boolean traingle(double x,double y, double z){</b>	
24	<b>if(x+y&gt;z &amp;&amp; ((x+z)&gt;y) &amp;&amp; ((z+y)&gt;x))</b>	
25	<b>return true;</b>	
26	<b>else</b>	
27	<b>return false;</b>	
28	<b>}</b>	
29	<b>}</b>	
30	<b>public class CITraingletest{</b>	
31	<b>public static void main(String args[]) {</b>	
32	<b>// boolean true_or_false;</b>	
33	<b>CITraingle it_obj= new CITraingle; compiler error</b>	
34	<b>itobj.read_numbers();</b>	
35	<b>double x=it_obj.x1;</b>	
36	<b>double y=it_obj.y1;</b>	
37	<b>double z=it_obj.z1;</b>	
38	<b>if(it_obj.traingle(x,y))</b>	
39	<b>System.out.println("this is not a vaild");</b>	
40	<b>else if(it_obj.traingle(x,y,z))</b>	
41	<b>System.out.println("this is valid traingle");</b>	
42	<b>else</b>	
43	<b>System.out.println("this is not a valid traingle");</b>	
44	<b>}</b>	
45	<b>}</b>	

Best wishes,  
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