**1. (0.5 mark) What is the output of the following code segment, if any?**

**int result = 0;**

**for(int i = 0; i < 3; i++)**

**for(int j = 3; j > 0; j--)**

**result = result + i\*j;**

**System.*out*.println(result);**

**A. 18 B. 24 C. 36**

**D. There is a compilation error. E. Infinite loop.**

**2. (0.5 mark) Assume that you have the following class:**

**public class Test {**

**public int number;**

**public void writeOutput()**

**{**

**int number = 3;**

**number = this.number - number \* this.number;**

**System.*out*.println(number);**

**}**

**}**

**Now, assume that you defined an object of the class above and used it in your program, as such:**

**public class TestMain {**

**public static void main(String[] args) {**

**Test t1 = new Test();**

**t1.number = 10;**

**t1.writeOutput();**

**}**

**}**

**What is the output of the program?**

**A. 3 B. 10 C. -6**

**D. -20 E. -90**

**3. (0.5 mark) What is the output of this code fragment, if any?**

**int x = 10;**

**do{**

**int y = x / 2;**

**if(y + 10 > x)**

**x = x + 10;**

**}while(x < 50)**

**System.out.println(" x = " + x);**

**A. x = 10 B. x = 60 C. x = 100**

**D. There is a compilation error.** Answer is D: missing semicolon after (while x<50)

**E. Infinite loop.**

**4. (0.5 mark) What is the output of this code fragment, if any?**

**int n = 0; /\* Line 1\*/**

**while(n < 3) /\* Line 3\*/**

**{**

**int m = 1;**

**if((n - m) % 2 == 0) n+=1;m-=1; /\* Line 6\*/**

**}**

**System.out.println("n=" + n + ",m=" + m); /\* Line 8\*/**

**A. n=3,m=-4 B. n=3,m=-3 C. Infinite loop.**

**D. There is a compilation error in line 6.**

**E. There is a compilation error in line 8.** m is out of scope

**5. (0.5 mark) Assume that you have the following class:**

**public class Test {**

**public int i;**

**public boolean b;**

**public String st;**

**}**

**Now, assume that you defined an object of the class above and used it in your program, as such:**

**public class TestMain {**

**public static void main(String args[]) {**

**Test t = new Test();**

**System.out.println(“i=“ + t.i);**

**System.out.println(“b=” + t.b);**

**System.out.println(“string=” + t.st);**

**}**

**}**

**What is the output of the program?**

**A. There is a compilation error. B. i=0, b=false, string=null**

**C. i=0, b=0, string=0 D. i=none, b=none string=none E. There is a run time error.**

answer is B

**6. (0.5 mark) You read the following statement in a Java program that compiles and executes.**

**customer.buy(intVariable);**

**What can you say for sure?**

**A. intVariable must be an int.**

**B. buy must be the name of an instance variable.**

**C. buy must be a method.**

**D. customer must be the name of a class.**

**E. customer must be a method.**

Answer is C

**Question 2 (2 marks)**

**Assuming that a year has 12 months and each month has exactly 30 days, complete the following two methods increment() and decrement() in class Date such that they increment/decrement the date by one day**

***note1*: year, month and day can not have a value of 0. If this happens, the object should return to its original state.**

***note2*: Each blank should have only ONE java statement or expression.**

**public class My\_Date {**

**private int day;**

**private int month;**

**private int year;**

**public void increment(){**

**day++;**

**if( ...........** day > 30**......... ){**

**……………....** day -= 30**..**

**month++;**

**if(month>12){**

**……** month-=12;**………..**

**………** year++;

**}**

**}**

**}**

**public void decrement(){**

**if(day!=1)**

**day--;**

**else{**

**day = …**30;**………**

**if( ………** month != 1**…….. )**

**month--;**

**else{**

**……………..** month = 12;

**……………..** year--;

**if(year==0){**

**…………...** increment();

**System.out.println("Error!!!");**

**}**

**}**

**}**

**}**

**}**

**Question 3 (5 Marks)**

Given the following class answer the questions below:

class Q2 {

private int a;

private int b;

private int c;

public void setA(int a){this.a = a;}

public void setB(int b){this.b = b;}

public void setC(int c){this.c = c;}

public int getA(){return a;}

public int getB(){return b;}

public int getC(){return c;}

public int m1(int a, int b){

for (int i = 0; i < 5; i++){

a++;

b++;

}

return a + b;

}

public boolean m2(int x, int y){

a = x + 1;

b = y / 2;

return m1(a, b) + x + y - a - b < c;

}

}

A- (1 mark) Suppose we run the code:

Q2 obj = new Q2();

obj.setA(1); obj.setB(2); obj.setC(3);

int x = obj.m1(1,1);

what will be the value of x, obj.a, obj.b, obj.c?

…………………

B- (1 mark) Suppose we run the code:

Q2 obj = new Q2();

obj.setA(1); obj.setB(2); obj.setC(3);

boolean b = obj.m2(1,1);

what will be the value of b, obj.a, obj.b, obj.c?

………………...

C- (3 marks) What is the output of the main method in the following class TestQ2?

public class TestQ2 {

public static void main(String args[]){

Q2 obj1 = new Q2();

Q2 obj2 = new Q2();

obj1.setA(0); obj1.setB(0); obj1.setC(10);

obj2 = obj1;

obj2.setA(4); obj2.setB(5); obj2.setC(-1);

while(!obj1.m2(1, 3)){

System.out.println("obj1.a = " + obj1.getA());

System.out.println("obj1.b = " + obj1.getB());

System.out.println("obj1.c = " + obj1.getC());

obj2.setC(obj2.getC() + 10);

}

System.out.println("obj2.a = " + obj2.getA());

System.out.println("obj2.b = " + obj2.getB());

System.out.println("obj2.c = " + obj2.getC());

}

}

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Result** | | | | | | | | |
| **Question No.** | **Relevant Student Outcome** | **SO is**  **Covered by %** | **Full Mark** | **Student Mark** | **Assessor’s Feedback** | | | |
| 1 | a | 30 |  |  |  | | | |
| 2 | i | 20 |  |  |  | | | |
| 3 | i | 50 |  |  |  | | | |
|  |  |  |  |  |  | | | |
|  |  |  |  |  |  | | | |
| Totals |  | 100% |  |  |  | | | |
|  | | |  | | |  |  |  |
|  | | |  | | |  |  |  |
| **I certify that the work contained within this assignment is all my own work and referenced where required.**    **Student Signature: Date:** | | | | | |  | **Feedback Received:**    **Student Signature: Date:** | |