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| --- | --- |
| No. of Pages | 2 |
| No. of Questions | 3 |
| Total Marks | 26 |
| **Time**: 50 minutes | |

**Department of Computer Science and Engineering**

B

**MIDTERM EXAMINATION Fall 2017**

**CSE 111: Programming Language II**

* Write theory teacher’s initial (MSA/MSN/DIP/SEJ) on top of the answer script.
* Answer all questions. Use **back part** of the answer script for rough work.
* Answer Question 1 at the **beginning part** of answer script.
* Write final answers of tracing problems **on the question paper**.
* Figure in bracket [] next to each question indicates marks for that question.
* At the end of exam, put **question paper** inside answer script and **return both**.
* Understanding the question is part of the exam, **please do not ask questions**. No washroom breaks.



**Section: \_\_\_ ID: \_\_\_\_\_\_\_\_\_\_\_\_\_ Name in CAPITAL: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Name/Initials of Lab Teachers \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lab Room Number \_\_\_\_\_\_\_\_\_\_\_\_\_ Lab Day and Time \_\_\_\_\_\_\_\_\_\_\_**

#### Question 1 [10 Points]

**public class Bird {**

**//your code here**

**}**

**public class Midterm {**

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

**Bird b1 = new Bird();**

**Bird b2 = new Bird("Big");**

**Bird b3 = new Bird("Small", "red");**

**Bird b4 = new Bird("Big", "blue");**

**Bird b5 = new Bird("Small");**

**b1.fly();**

**b2.fly();**

**b3.fly();**

**b4.fly();**

**b5.fly();**

**}**

**}**

Complete the **Bird** class so the **main** method above produces the following output:

**Bird\*is\*flying.**

**Big\*bird\*is\*flying.**

**Small\*red\*bird\*is\*flying.**

**Big\*blue\*bird\*is\*flying.**

**Small\*bird\*is\*flying.**

**[Answer on the answer-script]**

**Question 2 [10 Points]** **[Answer on question paper]**

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| **Output** |
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**Show the output of the following sequence of statements:**

**Scope sc1 = new Scope();**

**Scope sc2 = new Scope();**

**sc2.m2();**

**sc1.m1();**

**sc2.m1();**

**sc1.m1();**

**sc2.m1();**

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| **Consider the following class:** |
| **public class Scope{** |
| **public static int x = 4;** |
| **private int y = 20;** |
| **public void m1(){** |
| **int x = 100;** |
| **x = x + 30 + this.y;** |
| **System.out.println(x);** |
| **System.out.println(y);** |
| **y = y + this.y;** |
| **}** |
| **public void m2(){** |
| **int y = 10;** |
| **y = y + this.y;** |
| **System.out.println(x);** |
| **System.out.println(y);** |
| **x = this.x + 20 + this.y;** |
| **}** |
| **}** |

#### Question 3 [6 Points] [Answer on question paper]

**What is the output of the following code sequence?**

**int[] x = {20};**

**A c1 = new A();**

**c1.printInfo();**

**A c2 = new A(c1);**

**c2.printInfo(x);**

**A c3 = new A(c2);**

**c3.printInfo(x);**

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| **Output**  **[Answer on question paper]** | |
| **x** | **y** |
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| **class A{** |
| **public static int x = 20;** |
| **private int y = 200;** |
| **public A(){** |
| **int x = 200;** |
| **y = y - A.x;** |
| **A.x = A.x + y;** |
| **}** |
| **public A(A k){** |
| **int y = 22;** |
| **A.x = A.x + y + k.y;** |
| **}** |
| **public void printInfo(){** |
| **System.out.println(x + " " + y);** |
| **}** |
| **public void printInfo(int[] p){** |
| **int y = 22;** |
| **this.y = this.y - 10 + p[0];** |
| **A.x = A.x + p[0] + y;** |
| **p[0] = p[0] - 200;** |
| **System.out.println(x + " " + y);** |
| **}** |
| **}** |