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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 Spring 2018**

**CSE 111: Programming Language II**

* Write theory teacher’s initial (MSA/MSN/RAK/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: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Lab Teacher Name/Initials \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Lab Room Number \_\_\_\_\_\_\_\_\_\_\_\_\_ Lab Day & Time \_\_\_\_\_\_\_\_\_\_\_**

#### Question 1 [10 Points]

**public class Avenger {**

**private String name = "";**

**private String power = "";**

**//your code here**

**}**

**public class Midterm {**

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

**Avenger tony = new Avenger();**

**tony.setName("Iron Man");**

**tony.setPower("blast");**

**Avenger natasha = new Avenger("Black Widow");**

**natasha.setPower("shoot");**

**Avenger bruce = new Avenger("Hulk", "smash");**

**Avenger steve = new Avenger("Captain America", "punch");**

**System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");**

**tony.attack();**

**natasha.attack();**

**bruce.attack();**

**steve.attack();**

**}**

**}**

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

**Super hero name and power need to be set.**

**Power for Black Widow needs to be set.**

**Hulk is ready to attack.**

**Captain America is ready to attack.**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\***

**Iron Man\*is\*blasting.**

**Black Widow\*is\*shooting.**

**Hulk\*is\*smashing.**

**Captain America\*is\*punching.**

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

**Question 2 [6 Points]**

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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();**

**[Answer on question paper]**

|  |
| --- |
| **Consider the following class:** |
| **public class Scope{** |
| **public int x = 10;** |
| **private int y = 40;** |
| **public void m1(){** |
| **int x = 30;** |
| **x = x + 100 + this.y;** |
| **System.out.println(x);** |
| **System.out.println(y);** |
| **y = y + this.y;** |
| **}** |
| **public void m2(){** |
| **int y = 200;** |
| **y = y + this.y;** |
| **System.out.println(x);** |
| **System.out.println(y);** |
| **x = this.x + 20 + this.y;** |
| **}** |
| **}** |

#### Question 3 [10 Points]

#### [Answer on question paper]

|  |  |
| --- | --- |
| **Output**  **[Answer on question paper]** | |
| **x** | **y** |
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**What is the output of the following code sequence?**

**int[] x = {100};**

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

**c1.printInfo();**

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

**c2.printInfo(x);**

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

**c3.printInfo(x);**

|  |
| --- |
| **class A{** |
| **public int x = 100;** |
| **private int y = 10;** |
| **public A(){** |
| **int x = 20;** |
| **y = y - this.x;** |
| **x = this.x + y;** |
| **}** |
| **public A(A k){** |
| **int y = 11;** |
| **this.x = x + y + k.y;** |
| **}** |
| **public void printInfo(){** |
| **System.out.println(x + " " + y);** |
| **}** |
| **public void printInfo(int[] p){** |
| **int y = 11;** |
| **this.y = this.y - 30 + p[0];** |
| **printInfo();** |
| **x = x + p[0] + y;** |
| **p[0] = p[0] - 40;** |
| **System.out.println(x + " " + y);** |
| **}** |
| **}** |