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| --- | --- |
| No. of Pages | 2 |
| No. of Questions | 3 |
| Total Marks | 22 |
| **Time**: 50 minutes | |

**Department of Computer Science and Engineering**

A

**MIDTERM EXAMINATION Spring 2019**

**CSE 111: Programming Language II**

* Write theory teacher’s initial (AAR/FSH/JNM/MHT/MSA/MSN/SEJ/SLI/WAR)

on top of the answer script in LARGE FONT.

* 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]

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

**public class StudentTester**

**{**

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

**{**

**Student a = new Student(98765432,18101001,"A");**

**Student b = new Student(98765433,18101002,"B");**

**Student c = new Student(98765432,19101234,"A");**

**System.out.println(a.check(c));**

**a.identify();**

**a.match(c);**

**c.setName("C");**

**a.match(c);**

**a.match(b);**

**}**

**}**

Design the **Student** class so the **main** method above produces the following output:

**true**

**ApplicantID: 98765432, StudentID: 18101001, Name: A**

**18101001 is the same person as 19101234**

**18101001 is a different person from 19101234**

**18101001 is a different person from 18101002**

**Hint**:

Two students are same person if their ApplicantID matches and name matches even if the StudentIDs is different.

**Question 2 [6 Points]**

**[Answer on question paper]**

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

**A a = new A();**

**A b = new A();**

**a.methodA();**

**a.x = 5;**

**a.methodB();**

**b.y = 2;**

**b.methodB();**

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| **Output** | |
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| --- | --- |
|  | **public class A {** |
|  | **int x = 7;** |
|  | **int y = 1;** |
|  | **int methodA() {** |
|  | **x = x + y;** |
|  | **y = y - x;** |
|  | **System.out.println(x+" "+y);** |
|  | **return x + y;** |
|  | **}** |
|  | **void methodB() {** |
|  | **int x = 9;** |
|  | **x = x - y;** |
|  | **y = y + x;** |
|  | **System.out.println(x+" "+y);** |
|  | **}** |
|  | **}** |

**Question 3 [6 Points]**

**[Answer on question paper]**

|  |  |
| --- | --- |
|  | **class Test {** |
|  | **int x = 2;** |
|  | **int y = 4;** |
|  | **int sum = 6;** |
|  | **Test t;** |
|  | **void methodOne()** |
|  | **{** |
|  | **t = new Test();** |
|  | **t.sum += sum;** |
|  | **System.out.println(t.sum);** |
|  | **}** |
|  | **int methodTwo() {** |
|  | **System.out.println(++x);** |
|  | **methodOne();** |
|  | **System.out.println(y++);** |
|  | **return x \* y \* sum;** |
|  | **}** |
|  | **int methodThree() {** |
|  | **t.sum += methodTwo();** |
|  | **System.out.println(++t.sum);** |
|  | **return --sum;** |
|  | **}** |
|  | **}** |

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

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

**t.methodOne();**

**Test t2 = new Test();**

**t2.methodOne();**

**t2.methodThree();**

|  |
| --- |
| **Output**  **[Answer on question paper]** |
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