**BRAC UNIVERSITY**

**Department of Computer Science and Engineering**

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| **Examination**: Midterm  **Duration**: 1 hour  **No. of Questions**: 3 | CSE 111: Programming Language II | **Semester**: Summer 2019  **Full Marks**: 22  **No. of Pages**: 2 |

Answer the following questions.

Figures in the right margin indicate marks.

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| --- | --- | --- |
| Name:  (Please write in CAPITAL LETTERS) | ID: | Section:  A |

* Use **back part** of the the answer script for rough work. **No washroom breaks.**
* Write intial of theory teacher and section on top of the answer script in LARGE FONT

AAR/JNM/MSA/MSN/RYB/SEJ/SLI/TRA/WAR.

* Answer Question 1 at the **beginning part** of answer script.
* Write answer of Question 2 and 3 **on the question paper**.
* 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.

**Question 1: CO4 10 Points**

**Implement** the design of the **Batsman** class so that the following output is produced:

**Name: New Batsman**

**Runs Scored: 6101, Balls Faced: 7380**

**============================**

**Name: Liton Das**

**Runs Scored: 678, Balls Faced: 773**

**----------------------------**

**87.71021992238033**

**============================**

**Name: Shakib Al Hasan**

**Runs Scored: 6101, Balls Faced: 7380**

**----------------------------**

**82.66937669376694**

**Hint**: Batting strike rate (s/r) = runsScored / ballsFaced x 100.

**public class ScoreChecker {**

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

**Batsman b1 = new Batsman(6101, 7380);**

**b1.printCareerStatistics();**

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

**Batsman b2 = new Batsman("Liton Das", 678, 773);**

**b2.printCareerStatistics();**

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

**System.out.println(b2.battingStrikeRate());**

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

**b1.setName("Shakib Al Hasan");**

**b1.printCareerStatistics();**

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

**System.out.println(b1.battingStrikeRate());**

**}**

**}**

**Question 2: CO1 6 Points**

|  |  |  |  |
| --- | --- | --- | --- |
| **Illustrate** the output of the following statements:  **Design a = new Design();**  **Design b = new Design();**  **a.proc();**  **a.v1 = 3;**  **a.callBack();**  **b.v1 = a.v2;**  **b.proc();** | |  | **public class Design {** |
|  | **public int v1 = 7;** |
|  | **public int v2 = 5;** |
|  | **public void proc() {** |
|  | **v1 = v1 + 10;** |
|  | **System.out.println(v1+" "+v2);** |
|  | **}** |
|  |  |
|  | **public int callBack() {** |
| **Output**  **[Answer on question paper]** | |  | **int v2 = 8;** |
|  | **v1 = v1 + v2;** |
|  |  |  | **v2 = v1 - v2;** |
|  | **System.out.println(v1+" "+v2);** |
|  |  |  | **return v1 + v2;** |
|  | **}** |
|  |  |  | **}** |
|  |  |

**Question 3: CO2, CO3 6 Points**

**Illustrate** the outputs of the program below:

|  |  |
| --- | --- |
|  | **public class Test10{** |
|  | **private int sum, y, x;** |
|  | **public void methodA(){** |
|  | **int[] msg = new int[1];** |
|  | **msg[0] = 5;** |
|  | **y = y + methodB(msg, msg[0]);** |
|  | **x = y + methodB(x, msg[0]);** |
|  | **sum = x + y + msg[0];** |
|  | **System.out.println(x+" "+y+" "+sum);** |
|  | **}** |
|  | **private int methodB(int[] mg2, int y){** |
|  | **this.y = y - mg2[0];** |
|  | **this.x = x - 33 + y;** |
|  | **sum = sum - x + y;** |
|  | **mg2[0] = y - sum;** |
|  | **return mg2[0];** |
|  | **}** |
|  | **private int methodB(int sum, int mg1){** |
|  | **int x = 33 + mg1;** |
|  | **y = y - this.sum;** |
|  | **sum = sum + x + y;** |
|  | **System.out.println(x+" "+y+" "+sum);** |
|  | **return y - mg1;** |
|  | **}** |
|  | **}** |

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

**Test10 t;**

**t = new Test10();**

**t.methodA();**

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