

**Information and Computer Science Department**

**Summer Semester 153**

**ICS 102 – Introduction to Computing I**

**Midterm Exam**

**Tuesday, August 2, 2016**

**Duration: 100 minutes**

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| **Name:** |  |

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| **Question #** | **Max Score** | **Score** |
| **1** | 20 |  |
| **2** | 30 |  |
| **3** | 30 |  |
| **4** | 20 |  |
| **Total** | **100** |  |

**Question # 1**

1. Convert each of the following Algebraic expressions to Java expressions:

|  |  |
| --- | --- |
| Algebraic Expression | Java Expression |
|  |  |
|  |  |
|  |  |
|  |  |

1. Show the output lines for each of the following programs:

|  |  |
| --- | --- |
| Program | Output |
| **public class MidtermQ1A****{****public static void main(String[] args)****{** **String course = "ICS102 Java";****System.out.println(course.substring(0,5));****System.out.println(course.indexOf("Java"));****}** **}** |  |
| **public class MidtermQ1B****{****public static void main(String[] args)****{** **int x = 2;****switch (x)**  **{** **case 1: System.out.println("one");** **case 2: System.out.println("two");**  **case 3: System.out.println("three");** **}****}** **}** |  |
| **public class MidtermQ1C****{****public static void main(String[] args)****{** **int x, y;** **x = 20 + 40 / 5 \* 4;****y = 17 % 6;****System.out.println(x);****System.out.println(y);****}** **}** |  |

**Question # 2**

A car parking at the airport charges 2 riyals per hour or part of an hour. Write a program that reads the in-time and out-time from the user and calculates the charge.

|  |  |
| --- | --- |
| Sample Run:In-time: 13 20Out-time: 15 30Charge = 6 riyals |  |

import java.util.Scanner;

public class MidtermQ2

{

 public static void main(String[] args)

 {

 }

}

**Question # 3**

A class has n students and teams of m students need to be formed. Write a program that reads n and m then outputs the number of possible teams using the following formula:

$$r=\frac{n!}{m!×\left(n-m\right)!}$$

Sample Run:

Number of students: 5

Size of team: 3

There are 10 possible teams

import java.util.Scanner;

public class MidtermQ3

{

 public static void main(String[] args)

 {

 }

}

**Question # 4**

The university admission uses a weighted average: 20% high school average, 30% RAM1 score, 50% RAM2 score.

Write a program that reads the scores of a student in high school, RAM1, and RAM2 and outputs his weighted average.

import java.util.Scanner;

public class MidtermQ4

{

 public static void main(String[] args)

 {

 }

}