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|  | | **King Saud University**  **College of Computer and Information Sciences**  **Computer Science Department** | | | | |
|  | |  | | | | |
| **Course Code:** | CSC 111 | | | |
| **Course Title:** | Introduction to Programming | | | |
| **Semester:** | Fall 2016-17 | | | |
| **Exercises Cover Sheet:** | **Mid 1 Exam** | | | |
| **Duration: 90 min** | |  | | |
| Student Name: | |  | |
| Student ID: | |  | |
| Student Section No. | |  | |
|  | | | | |  | |
| **Tick the Relevant** | **Computer Science B.Sc. Program ABET Student Outcomes** | | | **Question No. Relevant Is Hyperlinked** | | **Covering**  **%** |
| √ | **a)** **Apply knowledge of computing and mathematics appropriate to the discipline;** | | | **1,2** | | **50%** |
|  | **b)** **Analyze a problem, and identify and define the computing requirements appropriate to its solution;** | | |  | |  |
|  | **c)** **Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs;** | | |  | |  |
|  | **d)** **Function effectively on teams to accomplish a common goal;** | | |  | |  |
|  | **e)** **Understanding of professional, ethical, legal, security, and social issues and responsibilities;** | | |  | |  |
|  | **f)** **Communicate effectively with a range of audiences;** | | |  | |  |
|  | **g)** **Analyze the local and global impact of computing on individuals, organizations and society;** | | |  | |  |
|  | **h)** **Recognition of the need for, and an ability to engage in, continuing professional development;** | | |  | |  |
| √ | **i)** **Use current techniques, skills, and tools necessary for computing practices.** | | | **1,2** | | **50%** |
|  | **j)** **Apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices;** | | |  | |  |
|  | **k)** **Apply design and development principles in the construction of software systems of varying complexity;** | | |  | |  |

1. **(6 Marks)**

Put your answers of the question 1 (**multiple choice questions**) in the following table:

|  |  |
| --- | --- |
| **Question** | **Answer** |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |
| 10 |  |
| 11 |  |
| 12 |  |

1. What will be the output of following statements?

**int x = 3;**

**int y = x++ \* 4;**

**System.out.print(y);**

1. 25
2. 24
3. 12
4. 33
5. What is the output of the following program:

**boolean var1 = false;**

**boolean var2 = true;**

**if (var1)**

**System.out.println(var1);**

**else**

**System.out.println(var2);**

1. 0
2. 1
3. true
4. false
5. What will be the output of the program if i = 1 and j = 10, x = 3?

**do {**

**if(i++ > --j)**

**x++;**

**} while (i < 5);**

**System.out.println(i + " " + j);**

1. i = 6 and j = 5
2. i = 5 and j = 5
3. i = 6 and j = 6
4. i = 5 and j = 6
5. Suppose you have the following code segment:

**x = 1.0;**

**integerVariable = x + 10;**

Which of the following statements is true?

1. integerVariable is of type int.
2. x is of type int.
3. integerVariable is of type double.
4. a && b.
5. What is the output of the following code segment, if any:

**int x = 1;**

**while(x % 6 != 5)**

**x++;**

**System.out.println(x);**

1. 1
2. 5
3. 6
4. Infinite loop.
5. What is the output of the following code segment, if any:

**double x = 7.8;**

**double y = (int)x;**

**System.out.println("x = " + x + ", y = " + y);**

1. x = 7.8, y = 7.0
2. x = 7.8, y = 7
3. x = 7.0, y = 7.0
4. x = 7.0, y = 7.8
5. Given x = 8, y = 0, z = 1, what will be displayed by the following statement?

**if (x > 0 && y < 0)**

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

**else if (z > 0)**

**System.out.println("No");**

1. Yes
2. Yes

No

1. No
2. Nothing
3. What will be the output of the following code?

**int sum = 0;**

**int i=0, j=0;**

**while (i < 7 && j < 6){**

**sum += i;**

**++i; j = i + 1;**

**}**

**System.out.println(sum);**

1. 5
2. 6
3. 10
4. compilation error
5. How many times this while loop will execute?

**int x = 2;**

**int y = 0;**

**while (x>0 && y<20) {**

**if (y % x != 0){**

**System.out.println(“even”);**

**y++;**

**}**

**else{**

**System.out.print(“odd”);**

**y++;**

**}**

}

1. 20 times
2. 2 times
3. 0 times
4. Infinite times
5. What is x after the following switch statement is executed?

**int var1 = 3;**

**int x = 4;**

**switch (var1++) {**

**default:**

**x = 1;**

**case 9:**

**x = 2;**

**case 7:**

**x = 3;**

**}**

System.out.println(x);

1. 1
2. 2
3. 3
4. 4
5. What is the value of i when System.out.print(i) is executed?

**int sum = 0;**

**int i = 0;**

**while (i < 5){**

**sum = sum + i;**

**i++;**

**}**

**System.out.print(i);**

**System.out.print(" ");**

**System.out.print(sum);**

1. 6
2. 5
3. 4
4. 3
5. What is the output of this code, if any?

**int number = 3;**

**do {**

**if ((number % 2) != 0)**

**System.out.print(number + “,”);**

**number -= 1;**

**}while (number <= 3);**

1. 3,4,5,
2. 3,4
3. Infinite Loop
4. 3
5. **(4 Marks)**
6. What will be the output of the following program if user enters 678 as an input?

**import java.util.Scanner;**

**public class Temp {**

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

**int varX;**

**int var1, var2, var3;**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter 3 digit-integer number: ");**

**varX = sc.nextInt();**

**var1 = varX / 100;**

**678/100=6**

**var2 = (varX / 10) % 10;**

**(678/10)=67%10=7**

**var3 = varX % 10;**

**678%10=8**

**System.out.println(var1 + " " + var2 + " " + var3);**

**System.out.println(var2 + " " + var3);**

**System.out.println(var3);**

**}**

**}**

678

78

8

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

1. Which two of the following three if statements are equivalent?
2. **if (a == b)**

**if (c == d)**

**a = 1;**

**else b = 1**;

1. **if (a == b) {**

**if (c == d)**

**a = 1; }**

**else b = 1;**

1. **if (a == b)**

**if (c == d) a = 1;**

**else b = 1;**

1 & 3

|  |  |  |  |  |  |  |  |  |
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| **Result** | | | | | | | | |
| **Question No.** | **Relevant Student Outcome** | **SO is**  **Covered by %** | **Full Mark** | **Student Mark** | **Assessor’s Feedback** | | | |
| 1 | a | 60 | 6 |  |  | | | |
| 2 | i | 40 | 4 |  |  | | | |
|  |  |  |  |  |  | | | |
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| Totals |  | 100% | 10 |  |  | | | |
|  | | |  | | |  |  |  |
|  | | |  | | |  |  |  |
| **I certify that the work contained within this assignment is all my own work and referenced where required.**    **Student Signature: Date:** | | | | | |  | **Feedback Received:**    **Student Signature: Date:** | |