Department of Computer Science & Engineering
Institute of Technical Education & Research, SOA University

Mid-Semester Examination, September-2017
Introduction to Computer Programming(CSE 1001)

Semester: 1st
Full mark: 30

Branch: All
Time: 2 Hours

Subject Learning Outcome	*Taxonomy Level	Ques. No.	Marks
Attain the knowledge of problem solving using programming language like Java.	L1	1(b),2(b), 3(a,b),5(b)	10
Design the procedural programming elements.	L3	2(c),3(c),5(a)	6
Analyze, test and debug programs that meet the desired outcomes.	L4	1(a,c),2(a), 4(a)	8
Combine multiple programming elements.	L3	4(b,c),5(c)	6

*Bloom's taxonomy levels: Knowledge (L1), Comprehension (L2), Application (L3), Analysis (L4), Evaluation (L5), Creation (L6)

Answer all five questions.
All questions carry equal marks. All bits of each question carry equal marks.

Q1.		
(a)	Find the output of the following code. *int a, b, c;* *a=-3+12*7-4;* *b=a*8+4%5-6;* *c=a+b*3-2%5-7;* *System.out.println(a+" "+b+" "+c);*	2
(b)	Write the java statements to make the exchanges among the variable A, B, C, D without using temporary variable, such that the value of A will go to D, D to B, B to C, C to A.	2
(c)	*Find the output of the following code.* *int x=2,y,z;* *x*=3+2;* *x+=y=z=5;* *System.out.println(x==y);* *System.out.println(((x==5)==(y==z))&&true);*	2
Q2.		
(a)	Find the output of the following code. *double a=13.14258;* *int b=(int)a;* *System.out.println(((double)b)/3);* *System.out.println(16.0/(int) a);* *System.out.println(105/(int)(a+20));*	2
(b)	Write a java program that takes three double values x0 , v0 , and t from the command line and prints the value of $x0 + v0t + gt^2/2$, where g is the constant 9.78033.	2
(c)	Write a java program that prints the sum of two random integers between 1 and 6 (such as you might get when rolling dice).	2

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Q3.		
(a)	Assume a string variable ruler1 contains "1" initially i.e. String ruler1="1" Write a java program to print the following output using string concatenation. (You can take extra string variables) 1 1 2 1 1 2 1 3 1 2 1 1 2 1 3 1 2 1 4 1 2 1 3 1 2 1	2
(b)	Write a java statements that helps the user count his change. The program should ask how many 25 paisa users have, then how many 50 paisa, then how many one rupees. Then the program should tell the user how much money he has, expressed in rupees.	2
(c)	Write a java program that takes three positive integers as command-line arguments and prints true if any one of them is greater than or equal to the sum of the other two and false otherwise.	2
Q4.		
(a)	Draw the control flow diagram to find the greatest among four numbers without using compound condition like (a > b && a > c && a >d).	2
(b)	Write a Java program to display whether a year is leap year or not.	2
(c)	Write a java program that prints the roots of the polynomial $ax^2 + bx + c$, prints an appropriate message if the discriminant is negative, and behaves appropriately (avoiding division by zero) if a is zero.	2
Q5.		
(a)	If the ages of Rahul, Ayush and Ajay are input through the keyboard, write a java program to determine the youngest of the three.	2
(b)	Differentiate between if-else-if ladder and nested if with proper examples.	2
(c)	A University conducts a 100 mark exam for its student and grades them as follows. Write a java program using switch case to print the grade according to the mark secured by the student.	2

Marks Range	Letter Grade
>=95	O
>=85 AND <95	A
>=75 AND <85	B
>=65 AND <75	C
>=55 AND <65	D
>=45 AND <55	P
<45	F