SCS 2204 - Functional Programming
Scala Tutorial – 3
Control Structures

1. Find an absolute value of a given number using if in Scala.

   a. scala> var absVal = if(a < 0) -a else a
      absVal: Int = 100
   b. rewrite this program in eclipse based Scala.

2. Write a Scala program to find the largest two numbers.

   a. Using If-Else statements.
   b. Using Ternary (three way) if-else operator. (expression ? statement1 : statement2)

3. Write a Scala program to find the largest of three given numbers.

   a. Using If-Else statements.
   b. Using Ternary (three way) if-else operator. (expression ? statement1 : statement2)

4. Write a Scala program to find whether a given whole number is *Odd* or *Even*.

5. What gets printed from the following program segments if the given set of values are used for variable *a* and *b*.

   (a) a=1,b=2   (b) a=1, b=3 (c) a=2, b=3 (d) a=2, b=2
   if (a==1)
   if (b==1)
   System.out.println("***");
   else
   System.out.println("###");
   System.out.println("===");
   Write a Scala program to test it.

6. The results of an examination are issued after calculating the average marks of three subjects. The grades of the examination results are categorised into four groups as Very Good, Good, Pass, and Fail.

Average<=39.0	Fail
39.0<Average<=54.0	Pass
54.0<Average<=69.0	Good
69.0<Average	Very Good

A program is required to decide the grade of a student, when his/her marks are given. The error message "Invalid Marks" should be displayed when the negative average is computed.
Write a Scala program :
   a. Using five if-else statements.
   b. Using a nested if statement
   c. Using ternary (three way) if-else operator. (expression ? statement1 : statement2)

7. Write a Scala program using *if-else* statements to determine which season a particular month is in if the month is given as a number (1 for January, 2 for February etc.).

        Months 12,1,2   Season =Winter
        Months 3,4,5   Season =Spring
        Months 6,7,8   Season =Summer
        Months 9,10,11   Season =Autumn
        Otherwise   Bogus month

8. Write a Scala program to convert a temperature given in Celsius into Fahrenheit and a temperature given in Fahrenheit to Celsius.

        Celsius Temp=5/9 x (Fahrenheit Temp –32)
        (Hint : Use two variables for *temp* and *scale (Fahrenheit or Celsius)*

9. Write a Scala program to simulate a pocket calculator that can perform the following normal calculations.

        Addition, Subtraction, Multiplication, and Division.