

IT Number:

Machine Number:

Lab:



Sri Lanka Institute of Information Technology

B.Sc. Degree  
in  
Information Technology

Mid Examination  
Year 1, Semester 2 (2018)  
January Intake

Object Oriented Programming (JAVA)  
(IT1108)

**Paper Version D**

Duration: 1 Hour

**SLIIT ACADEMY  
LIBRARY**

Instructions to Candidates:

- ◆ This is a closed book examination.
- ◆ This paper contains 2 questions on 3 pages without the cover page.
- ◆ Create a Folder on the **Desktop** with your **IT Number** and save all your programs in the folder.
- ◆ Read all questions before answering.
- ◆ The total marks obtainable for this examination is **30**.
- ◆ Use only the **notepad** as the text editor.

### Question 1

(20 Marks)

Write a method call *calculateCircularForce* which calculate the centripetal force as double value. The method should take two parameters as the user input (velocity: float, radius of circular path: float). The formula to calculate the centripetal force is as follows:

$$\text{centripetal force (f)} = \frac{mv^2}{r}$$

f = centripetal force

m = 250.74kg (fixed value)

v = velocity

r = radius of circular path

Write a main method to take the velocity and radius of circular path as user input and find the centripetal force (f) by calling *calculateCircularForce*. Based on the calculated centripetal force print the type, according to the following criteria.

Force	Type
0-100	Low Impact
101-150	Normal Impact
151-200	High Impact
201>	Ultra-Impact

**Hint:** Use the scanner class to get the inputs from the user

**Sample Input:**

Enter the velocity: 50.25

Enter the radius of circular path:30

**Sample Output:**

Centripetal Force is 21104.472

Type of the Force is Ultra Impact

**Note: -round the frequency to three decimal points.**

**Marking Criteria:**

Criteria	Marks	Marks Obtained
Proper class structure and main method	2	
Importing the Scanner class and their usage	2	
Reading user input	2	
Calling the method with correct parameters	2	
correct method header with correct parameters marks	2	
Rounding the answer	4	
Calculate the answer	2	
Deciding the answer based on the calculation using nested if else statements	2	
Final output with compiled ByteCode	2	
<b>Total Marks</b>	<b>20</b>	

**Question 2****(10 Marks)**

Write a java program which takes two numbers as inputs using command line arguments.  
Your program should print count sum of tan values between them.

**Sample Input:** 59 61

**Sample Output:** Sum = tan (60) + tan (61) = 4.063208333651983

**Note:** -No rounding is required.

**Marking Criteria:**

Criteria	Marks	Marks Obtained
Proper class structure and main method	2	
Usage of the command line arguments	2	
Conversions of datatypes	2	
Calculating the answer with loops	3	
Final output with compiled ByteCode	1	
<b>Total Marks</b>	<b>10</b>	