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 C

Duration: 1 Hour

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

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

f = centripetal force

m = 450.7kg (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 ***calculateCentripetal*** . 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: 30.45
Enter the radius of circular path:12
```

Sample Output:

```
Centripetal Force 34824.2
Type of the Force is Ultra Impact
```

Note: -round the frequency to one 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	
Total Marks	**20**	

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 cos values between them.

Sample Input: `40 42`

Sample Output: `Sum = cos (41) + cos(42) = -1.3873245925121778`

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	
Total Marks	**10**	