Dhirubhai Ambani Institute of Information & Communication Technology
First In Semester Examination, Autumn Semester 2017-2018

Course Title	**IT110 Introduction to Programming Lab**	**Max Marks**	**20**
Date	**24th Oct 2017**	**Time**	**120 mins**

Group 3

For each of the problems given below write C program. You need to submit 6 files in total, 3 program files (*.c files) and 3 files for captured input & output (text files)
For Problem 1: EnrollmentNo_Problem1.c (e.g. 201701500_Problem1.c) and captured output as EnrollmentNo_Problem1.txt (e.g. 201701500_Problem1.txt)
Similarly for Problem 2 and Problem 3, submit C program files and captured output files.

Q1 – 5 marks

Write a program to read a single ASCII character from user continuously until user enters percentage sign (%). For each entered character, you must check if the value is vowel or consonant and display the appropriate message.

Q2 – 5 marks

Write a program to calculate the sum of series: Assume that fact(num) function is available to you which provides factorial value of a given number so you don't need to calculate factorial.

$x - \frac{x^3}{3!} + \frac{x^5}{5!} - \cdots - (-1)^n \frac{x^{2n+1}}{(2n+1)!}$ Where n is provided by user

Q3 – 10 marks

In an integer array of 15 numbers each having single digit, count the number of occurrences for each integer value. Move all the value to the end of an array which is repeated the most. If two values have same number of occurrences then take the first value.

e.g. User Input: {1, 5, 7, 3, 9, 0, 2, 5, 6, 8, 2, 1, 4, 1, 6} → 3 occurrences of 1 is the most number of occurrences all 1 will be moved at the end of an array, hence the output array will be {5, 7, 3, 9, 0, 2, 5, 6, 8, 2, 4, 6, 1, 1, 1}