OBJECT ORIENTED PROGRAMMING

SECTION – C [WEDNESDAY AUGUST 18, 2021: 2:00 PM – 5:00 PM]

ASSIGNMENTS – 01 (RP01) CODE: ASSIGN01

NOTES:

i) Create files with the following file naming conventions: If your roll number ends with **abc**, year of admission is 20**19** and assignment code is **Assign01** then, use the file name as follows: Assign012019abc.cpp (OR) Assign012019abc.java (use appropriate extensions like .cpp or .java suitably).

For example, if the roll number ends with 172; year of admission is 2019 & the assignment code is Assign01, then the file name should be **Assign012019172.cpp** (OR) **Assign012019172.java**

ii) Strictly follow the file naming convention. Otherwise, it will attract a penalty upto 20%.

PROBLEMS [Total Marks: 20]

The following problem has to be solved using C++. File name has to end with .cpp

1) **[Marks: 10]**
Assume the following array **arr** of size n floating-point numbers where n is in [40, 50] in the main Method. Now write separate functions for the following tasks:

a) Generate random values for the above array **arr** of n floating-point numbers.

b) Write a recursive method to print the values of the above array a of size n

c) Write a recursive method to find two consecutive numbers whose sum is greater than the average of n numbers. Print such pairs of consecutive numbers.

The following problem has to be solved using java. File name has to end with .java

2) **[Marks: 10]**
Create a JAVA class namely, **SortNumbers** and do the following:

Let A be a 2 x 10 matrix

17	11	21	41	55	131	74	101	98	139
89	15	2	59	50	36	125	60	151	180

a) Write a method to move all prime numbers to the first row and move all non-prime numbers to the second row.

b) Write a method to sort all prime numbers in decreasing order and non-prime numbers in increasing order. **You should not use any in-built methods for sorting the elements.**