

OBJECT ORIENTED PROGRAMMING

SECTION – C [WEDNESDAY AUGUST 25, 2021: 2:00 PM – 8:00 PM (DUE TO OBE LAUNCH)]

ASSIGNMENTS – 02 (RP02)

CODE: ASSIGN02

NOTES:

- i) Create files with the following file naming conventions: If your roll number ends with **abc**, year of admission is **2019** and assignment code is **Assign02** then, use the file name as follows: **Assign022019abc.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 Assign02, then the file name should be **Assign022019172.cpp** (OR) **Assign022019172.java**
- ii) Strictly follow the file naming convention. Otherwise, it would attract a penalty upto 20%.

PROBLEMS

[Total Marks: 20]

Note: Use random number generator to generate inputs wherever needed.

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

1) [Marks: 10]

- a) Consider the following array of characters:

B	A	Y		O	F		B	E	N	G	A	L		I	S		V	E	R	Y		S	C	E	N	I	C
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Write a method to find all 3-letter combinations (left to right) including the space in which we preserve the following order:

ASCII (first character) > ASCII (second character) < ASCII (third character)

For example, ASCII ('G') > ASCII ('A') < ASCII ('L')

Print all such 3-letter combinations using void printKGrams(int start);

- b) Write the following methods to find all prime palindrome numbers for the given interval $0 < k < m < 1000$

void findPrimePalindromes(int m);

void findPrimePalindromes(int k, int m);

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

2) [Marks: 10]

- a) Create a JAVA class namely, Factors and write a method to do the following:

void computePrimeFactors(int k);

This method can in turn use the following methods to find and print each prime factor.

void findPrimeFactor(int num)

void printFactor(int p)

- b) Create the following method to print all even factors of a given number num and this method should return their sum at the end.

int evenFactors(int num);