



University of Engineering & Management, Kolkata

Odd Semester Examination, February, 2021

Course: B. Tech

Semester: 1<sup>st</sup>

Paper Name: Computer Programming and Problem Solving using Python and C - I

Paper Code: ESC181

Full Marks: 100

Time: 3 Hours

---

Instructions:

1. Students need to answer all questions of the allotted Set.
2. The answers should be written in white papers (preferably A4, but not mandatory).
3. The First page of the answer script must have Students Name, Section, Class Roll, Enrolment Number and Registration Number written at the top.
4. Subsequent pages must have Section and Roll Number written at the top.
5. The entire answer script is needed to be scanned and a single PDF file should be submitted.
6. The file name should be "Section\_Roll.pdf" (e.g. A\_100.pdf)

Set - 10

1. Write a C program to read 'n' numbers from user into an array where 'n' is user given. Print the difference of the sum of positive and sum of negative numbers.
2. Write the function definition of the following **recursive** function declaration in C programming language. Use this function to calculate the nth Fibonacci number where 'n' is user given.

int fib(int n);

3. A matrix (a) is said to be Upper Triangular if it satisfies the following conditions:

$$a[i][j] = \begin{cases} x, & i \leq j, x \neq 0 \\ 0, & i > j \end{cases}$$

Write a C program to check if a user given matrix of size 3×3 is upper triangular or not.

4. A string is called a palindrome when spelled forward is same if spelled backward. Write a C program to read a user given string of any size of your choice. Check if the string is Palindrome or not. Do not use 'string.h'.