University of Engineering & Management, Kolkata

Odd Semester Examination, February, 2021

Course: B. Tech Semester: 1st

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 - 7

1. A warehouse has a collection of boxes of different dimensions. The dimension of a box is defined by the height, width and depth of the box. A 2D array can be used to store the dimension of boxes. The matrix can have 3 columns. Each row of the 2D matrix can store the height, width and depth of one box respectively. Write a C program to read the dimension of 10 boxes in a 2D array. Print the dimension of the box having maximum volume.
2. Write the function definition of the following **recursive** function declaration in C programming language. Use this function to calculate the factorial of a user given number 'n'.

   ```
   int fact(int n);
   ```
3. Write a C program to print all prime numbers between 'a' and 'b' where 'a' and 'b' are user given.
4. Write a C program to print the following pattern up to 'n' lines.

   ```
   A
   B B
   C C C
   …….
   ```