University of Engineering & Management, Kolkata

Odd Semester End Term Practical Examination, January, 2022

Programme Name: B.Tech in Computer Science **Semester: 5th**

Paper Name: IT Workshop

Paper Code: PCCCS 592

Full Marks: 80 **Time: 3 hours**

SET - I

Attempt all questions. Each question carries 20 marks.

Q. No. 1. Consider the below series:

0, 0, 2, 1, 4, 2, 6, 3, 8, 4, 10, 5, 12, 6, 14, 7, 16, 8 ……

Write a Python program to find the nth term in this series.

a) The value n in a positive integer that should be read from *STDIN* the nth term that is calculated by the program should be written to *STDOUT*.
b) Other than the value of the nth term no other characters /strings or message should be written to *STDOUT*.

Q. No. 2. Create a MATLAB Script to plot the values in polar coordinate format *(r,ϑ)*, where each point on a plane is determined by a distance from a reference point and an angle from a reference direction. θ values should be expanded by *linspace* and the plotting type is *polarplot*. Show *hold on* command to use the *ploarplot* function in same graph for different value sets i.e. at least 4 times. (Take user input by *input* function)

Q. No. 3. Write a Python program for a given inputs of maximum of 100 digit numbers as input, find the difference between the sum of odd and even position digits. (Take user input)

Q. No. 4. Create a MATLAB Script to plot the values of *Sin(x)* and *Cos(x)* for a predefined interval [-10 22] using *fplot* function. By *hold on*, also plot the parametric curve *x=cos(3t)* and *y=sin(2t).* Show some *LineStyle* features like *LineWidth, Marker, MarkerSize, MarkerFaceColor* etc. in both plotting types.

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