Code No : **19CST303**

R19

II B. Tech I Semester Regular Examinations, March - 2021
SCIENTIFIC COMPUTING USING PYTHON
(Civil Engineering)

Time : 3 Hours   **Max. Marks : 60**
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Note : Answer **ONE** question from each unit **(5 × 12 = 60 Marks)**
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UNIT-I

1. a) Define Identifier. Discuss the rules to be followed for defining an identifier in Python with examples.   [6M]

    b) Write a Python program to convert given temperature value from Celsius to Fahrenheit.   [6M]

(OR)

2. a) Write a Python program to read two complex numbers and perform addition and multiplication.   [7M]

    b) Discuss features and applications of Python.   [5M]

UNIT-II

3. a) Illustrate the usage of membership and Identity operators in Python with suitable examples.   [6M]

    b) Design a Python program to check given number is Armstrong or not.   [6M]

(OR)

4. a) Write a short note on the following statements: [6M]
        i) Break   ii) continue   iii) Pass

    b) Create a Python script to generate the prime numbers from 1 to 100.   [6M]

UNIT-III

5. a) List out basic operations that can be performed on Lists.   [6M]

    b) Describe various types of function arguments in Python.   [6M]

(OR)

6. a) Define dictionary in Python. How do you access and modify elements in dictionary?   [6M]

    b) Demonstrate the recursive functions in Python with suitable examples.   [6M]

UNIT-IV

7. a) Explain Power and logarithmic functions in Math module.   [6M]

    b) List different arithmetic operations on Numpy arrays with example program.   [6M]

(OR)

8. a) Develop a program to find addition and multiplication of two 3 X 3 matrices using Numpy. [7M]

    b) What is package in Python? How do you install Python packages using PIP? [5M]

UNIT-V

9. a) Describe various types of Plots that we can draw using Matplotlib library. [6M]

    b) Create a program to perform 1D linear interpolation between two numbers using Scipy. [6M]

(OR)

10. a) How do you modify the appearance of a plot, tick marks and axes labeling? [6M]

    b) Outline the functions available when we import scipy.integrate package. [6M]

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