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Roll No: 2201640130142

PRANVEER SINGH INSTITUTE OF TECHNOLOGY KANPUR

Odd Semester Session 2023-24 Pre-University

B. Tech.- III Semester

Python Programming (BCC302)

CO Number	Course Outcome
CO1	Able to define [**1. Remember**] the basic terminologies of Python programming
CO2	Able to describe [**2. Understand**] conditional statements, loops, functions, data structures and Tkinter, Numpy, Pandas, and Matplotlib in Python Programming
CO3	Able to construct [**3. Apply**] the Python Programs by applying packages and libraries.
CO4	Able to examine [**4. Analyze**] usage of searching, sorting & exception handling.

Time: 3 Hrs. M. M. 70

Section A

Q1. Attempt all questions: **(2X7 = 14 Marks)**

a) Define keyword argument and positional arguments in python. CO1

b) Define the working of split() and replace() methods of string with code example. CO1

c) Explain the properties of tuple with example. CO2

d) Define how keys and values are accessed from dictionary. CO1

e) Explain different modes of opening a file in python. CO2

f) Explain set iterable with code example in python. CO2

g) Define local and nonlocal scope of variable with suitable example. CO1

Section B

Q2. Attempt all questions: **(7X3 = 21 Marks)**

a) Illustrate various ways to read and write data in text file with the help of python program. CO3

b i) Construct a python program to copy the contents of one file to another file. Also, give the code example of *with* keyword in the context of file handling. CO3

OR

ii) Apply sort() and sorted() functions on the below list and explain the output. CO2
lst = [4,3,6,1,9,10,56,12]

c i) Illustrate the recursive approach in Fibonacci series and also write a program to find n^{th} term of Fibonacci series using recursion CO4

OR

ii) Illustrate list comprehension with suitable example. CO4

Section C

Q3. Attempt any one part of the following questions: **(7X1 = 7 Marks)**

a) Explain the types of arguments used in functions in Python with the help of example. CO2

OR

b) Explain the purpose and working of loops. Discuss break and continue with example. Write a python program to convert time from 12 hour to 24-hour format. CO2

Q4. Attempt any one part of the following questions: **(7X1 = 7 Marks)**

a) Distinguish exceptions and assertions in python along with the code how to handle exceptions with try-finally. CO4

OR

b) Distinguish between Numpy Arrays and python lists along with examples. CO4

Q5. Attempt any one part of the following questions: **(7X1 = 7 Marks)**

a) Explain the use of matplotlib and pyplot along with different types of plots in matplotlib. CO2

OR

b) Explain series and dataframes in pandas. Also, explain the method to create copy of series in pandas? CO2

Q6. Attempt any one part of the following questions: **(7X1 = 7 Marks)**

a) Illustrate the role of generators with its advantages. Write a program to illustrate the use of generator by creating a generator that reverses a string. CO4

OR

b) Illustrate grid layout in Tkinter. Construct a program to display two labels with different background. Write a program to print a colored text on a colored background of GUI window. CO4

Q7. Attempt any one part of the following questions: **(7X1 = 7 Marks)**

a) Illustrate Numpy arrays along with types. Also, explain the concept of slicing in num CO3

OR

b) Construct a python program to get the Fibonacci Series between 0 to 50. CO3