UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2022

Course: Python Programming	**Semester: II**
Program: B. Tech (CSE)	**Time : 03 hrs.**
Course Code: CSIB-1002	**Max. Marks: 100**

Instructions:

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	**Predict output of the following python script:**	4	CO2

a) a = ("INDIA")

for i in range(2):

   a = (a,)

print(a)

b) a = [1,2,0,3,1]

for i in a:

   print(a[i-2]+ a[i+1])

c) def myfunc(n):

  if n<=1:

   return 1

  else:

   return (myfunc(n-1) + myfunc(n-2) + n**2)

print(myfunc(4))

d) dict={"s1":["10","20","30"],"s2":["40","50","60"]}

for i in dict:

```
    print(i)

print(dict['s1'][0] + dict['s2'][1])
```

Q 2	Explain range() and lambda function, with example	4	CO1
Q 3	Differentiate list and numpy arrays. Write a python script to create an array of 10 integer numbers and to find cube of each number.	4	CO4
Q 4	List and define different types of loops in python with syntax. Define pass keyword in python.	4	CO2
Q 5	Write a python script to create a Tkinter window. Enlist some widgets classes of Tkinter module.	4	CO3

SECTION B
(4Qx10M= 40 Marks)

Q 6	Demonstrate the use of exception handling in Python and throw the following exceptions and handle using try-except blocks. • **TypeError** • **IOError** • **NameError** • **KeyError** • **ValueError**	10	CO3
Q 7	Discuss the usefulness of pandas library and write a program to create a dataframe to store the following data to a .csv file Country Matches Won A 10 B 20 C 16 D 8 E 14 Then read the data from a file and generate a graph of the data. **OR** Highlight the main features of OOPs. Write a python program to show the concept of inheritance in python programming.	10	CO4 CO2
Q 8	Consider the file with records of roll no, student name and marks(in this order) are given below: 1 Rahul 23	10	CO1

	2 Suraj 45 ... ... 991 Krishna 61 ... ... Write a function to find the name of the student with highest marks.		
Q 9	Write a program to create a menu with the following options 1. Area of a circle 2. Area of a triangle 3. Area of a rectangle 4. Area of a square 5. Area of a cube Accepts users input and perform the operation accordingly. Use functions with arguments	**10**	**CO2**
	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	Discuss the usefulness of pandas library and write a program to create a dataframe to store the following data to a .csv file Country Matches Won A 10 B 20 C 16 D 8 E 14 Then read the data from a file and generate a graph of the data. **OR** a. Write a python script to create a file "weather.txt" which stores the average rainfall (in mm) of each month of year 2021 in Dehradun & Jaipur in the given format. (First integer value represents avg. rainfall in the month of January and last value in December). Take inputs from the user and store in the file. e.g. Dehradun 250 120 100 105 95 90 450 540 280 180 150 200 Jaipur 120 90 75 80 40 102 340 280 150 90 30 60	**20**	**CO4** **CO4**

	b. For above given data, write python script to read content from file and : 1) Compute average rainfall in year 2021 for both cities 2) For Jaipur city, find the month in which maximum rainfall is recorded. 3) Using matplotlib module, draw a bar graph for both the cities		
Q 11	a) Write a python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then ad 'ly' instead. If the given string is less than 3, raise an exception and print invalid input. b) Write a function that takes a list of words and returns the length of the longest one.	**12+8= 20**	**CO2**