SRN | | | | | | | | | | | | |

PES University, Bangalore
(Established under Karnataka Act No. 16 of 2013)

UE19/UE18/17CS101

END SEMESTER ASSESSMENT (ESA) B. Tech 1st SEMESTER- MAY 2022

UE19/UE18/UE17CS101: Python For Computational Problem Solving

Time: 3 Hrs | Answer All Questions | Max Marks: 100

1.	a)	Define the following. i) Moore's law ii) Operating system iii) Limits of computational problem solving.	6M
	b)	List the difference between compiler and interpreter.	4M
	c)	Say True or False for the following: i) x==8 is a valid expression. ii) 5&1==0 iii) Python is a case sensitive language iv) input() does not take any argument. v) Time required to solve a problem on a computer depends only on the speed of computer	5M
	d)	Give the sequence of python steps required to produce today's date.	5M
2.	a)	List and explain the different data structures available in python.	5M
	b)	Indicate the output or reason for error if any. (i)print("PESU") (ii)print("100"/"100") (iii)a=100; b=0; print(str(a)*b) (iv) a=500; print(++a) (v)a=200; b=10; print(a==b)	5M
	c)	Write a program to generate the following pattern the expected output is: 1 3 5 7 9 11 13 15 17	5M
	d)	Write a program to check whether 2 numbers are equal or not using bitwise operator	5M
3.	a)	Write a python program using function to find the total occurrences of a specific word.	5M
	b)	Explain the different ways of importing modules in python	5M
	c)	Write a function to mimic filter-called myfilter. Test this with the following calls (i) Given a list of strings, remove all the strings having first character as digit. (ii) Given a list of tuples containing 2 integers, remove all tuples where second element in tuple is not a factor of first element.	5M
	d)	What get printed i)	5M

SRN | | | | | | | | | | | |

		x=20
		def foo():
		x=100
		x=150
		foo()
		print(x)
		
		ii)
		x=50
		def fun():
		x=2
		print(x)
		fun()
		print(x) ii) def fn(x):
		return(x+x)
		print(fn(fn([8])))	

4.	a)	Explain the following i)try ii) except iii) finally	6M
	b)	Write a program using classes to find the distance between 2 points.	4M
	c)	What is inheritance? Explain the different types of inheritance	5M
	d)	Write a program that allows the user to enter a value between 0 and 200 (inclusive). Write a user defined exception that is raised if the user enters any value above 200.	5M
5.	a)	Write a python program to read last n lines from a file.	5M
	b)	If f1 and f2 are file objects opened what would the following expression give? set(f1) and set(f2).	5M
	c)	What is a file? Explain different modes of opening a file.	5M
	d)	A text file “PYTHON.TXT” contains alphanumeric text. Write a program that reads this text file and writes to another file “PYTHON1.TXT” entire file except the numbers or digits in the file	5M