REVISED

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

PES University, Bangalore

(Established under Karnataka Act No. 16 of 2013)

UE19CS101

Dec 2019: END SEMESTER ASSESSMENT (ESA) B.TECH. I SEMESTER

UE19CS101- Introduction to Computing Using Python

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

1.	a)	i. Write the output of the following python code snippet. **print(format("ICUP Examination","^30"))** ii. Evaluate the following arithmetic expression using rules of operator precedence in Python. **a. (2**2)**(2**3) b. 10<20 and 30<20 or 40 >10** ii. Define an Algorithm.	01 + 02 + 02 = 05
	b)	i. State whether the following statements are TRUE or FALSE **a. An identifier cannot start with a digit. 1variable is invalid, but variable1 is perfectly fine.** **b. Operating System is an application software.** ii. What is the error in the following statement in python? **global = 1** iii. Convert the decimal number **4096** to **Binary number** and **hexadecimal number.**	02 + 01 + 02 = 05
	c)	**Convert** the following pseudo code into python code using **elif control statement.** If Marks >= 90 print Grade is A Otherwise if 80 <= Marks < 90 print Grade is B Otherwise if 70 <= Marks < 80 print Grade is C Otherwise if 60 <= Marks < 70 print Grade is D Otherwise if 50 <= Marks < 60 print Grade is E Otherwise if Marks < 50 print Grade is F	05
	d)	**What is the output of the following python code snippet?** **1. If p in (1,3,5,7,8,10,12):** **d = 31** **else:** **if p in (4, 6, 9, 11):** **d=30** **else:** **if p ==2 :** **d=28** Suppose if the value of **p is read as 8** what is the output of the following statement on execution. **2.** Consider that a customer approaches a bank for a housing loan amount of 900000.00. What is the output generated by the following code snippet? **firstloan =True** **if (firstloan) :** **subsidy=0.20 * loanamount** **print("Eligible for subsidy of Rs. ",subsidy)** **else:** **subsidy = 0** What is the interest amount customer needs to pay back to the bank if the interest rate is 4% for a period of 1 year? Subsidy amount has to be subtracted before the simple interest amount is calculated. Write the equivalent python statement for the same.	02 + 03

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

2.	a)	Write a python script to generate a **geometric progression** (sequence) with a common ratio 3 up to 50. Also, generate **arithmetic progression** with a common difference of 3. Let the sequence start from 1. **Determine** the common elements. Use while loop control statement only once. [GP Ex: 4, 12, 36..upto 150],[AP Ex: 1,4,7,10...]	04

	b)	What is the output of the following python code snippets?
		i. `print(list(x+y for x in ['Python ','C '] for y in ['Language','Programming']))`
		ii. `what = [ x for x in range(50) if x % 2 == 0 if x % 5 == 0]`
		`print(what)`
		iii. `A= ["Even" if i%2==0 else "Odd" for i in range(10)]`
		`print(A)`
			06

	c)	i. Write a python script to find the **sum of all the elements** in the given list A. A= ["Details...", 1000,2500,4000,3500] ii. Write a python script to **reverse** a given tuple T= ('z','a','d','f','y','e','h','k') iii. Let X={1,3,2,5,9} and Y={2,6,8,9} **Write the python statement** that generates output as : {1,3,5}	06
	d)	Differentiate the following i. **tuple** and **list** ii. **finally block** and **except block**	04

3.	a)	Write a function in Python to find the length of a given string. Do not use built-in function. Use the template given below.
		`def find_str_length(str):`
		`counter =0`
		`#complete the code`
		`return counter`
			04

	b)	Consider the following text: """ English Daniel **Robinson Crusoe** Telugu Tagore **Geethanjali** Kannada TAARASU **Raktharathri** English Shakespeare **Hamlet** Kannada TAARASU **KambaniyaKuyilu** Sanskrit Kalidasa **AbhignanaShakuntala** Telugu SriKrishnadevaraya **Amukthamalyada** """ Write python code to display the following output using **set** and **dictionary** concept of python. **Number of Books: 07, Number of Authors: 06, Number of Languages: 04** **Number of books in each lang:** **Eng: 02, Telugu : 02, Kannada: 02, Sanskrit: 01** [Create a set of authors and a set for Languages.]	06

	c)	i. What is the output of the following python code?
		What feature of python is used in the below mentioned code?
		`def whatttt(limit):`
		`a, b = 10,17`
		`while a < limit:`
		`yield a`
		`a, b = b, a + b`
		`x = whatttt(500)`
		`for i in whatttt(500):`
		`print(x.__next__())`
			06

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

		ii. What is the output of the following python code?
		def fooo(ml,x,k=0)
		if k== len(ml):
		return -1
		elif ml[k] = x:
		return k
		else:
		return fooo(ml,x,k+1)
		
		x= [30, 40, 10, 50,60]
		print(fooo(x,25))
		print(fooo(x,10))
		
		Explain what each of these codes do?	

	d)	Write the different ways of **matching argument** in python. Explain each with an example.	04
4.	a)	Write the syntax of the following features of python. **i. map ii. filter iii. reduce**	03
	b)	i. Consider two lists: **A=[1,2,3,4] and B=[9,8,7,6]** to generate the **output: [9,16,21,24]** Write a python script to multiply two lists using list comprehension and zip. **ii.** Generate a **scalar matrix** of **order 4**. Assume the **scalar quantity as 5**. **iii.** Given the sequence of characters / letters, **write a function** that removes vowels. Use filter feature of python. Example : input sequence – 'q','w','e','r','t','y','u','i','p' Output sequence – 'q','w','r','t','y','p'	08
	c)	What is the output of the following python script? name = ["Manusri", "Nikhilasri", "Shambusri", "Asthasri"] roll_no = [2, 4, 1, 3] marks = [40, 50, 60, 70] mapped = zip(name, roll_no, marks) mapped = set(mapped) print ("The zipped result is : ",end="") print (mapped) **Note:** ZIP function in python is used to combine two or more Iterators.	03
	d)	Consider that functions Rect_Area () , Cir_Area(), Tri_Area() defined in **Farea.py** file. How do you access these functions from Fclient.py file. Farea.py file : def Rect_Area(l,b): **#complete the code** def Cir_Area(l,b): **#complete the code** def Tri_Area(l,b): **#complete the code** Fclient .py file: **#complete the code to access all the functions from the file Farea.py**	06
5.	a)	Create a class **Bank_Account** which has attributes **acct_num** and **balance**. Create a derived class of Bank_Account called **Cust_Account** which has attributes **cust_name** and **cust_acct_type.** Write functions to perform the following operations that are the defined in the class Cust_Account. i. Deposit the amount. def deposit(amount): **#complete the code** ii. Withdraw the amount and display suitable messages using exceptions.	08

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

		def withdraw(amount): **#complete the code** iii. def dispbal(..): **#complete the code** Define a user defined exception class called **MyException.** The **Cust_Account** class derives **MyException** class as well (**multiple inheritance**). Note: use constructors for initialization. Totally define 3 classes [Bank_Account, Cust_Account and MyException]. Sample message : If balance is less than the amount to be withdrawn then display as " Insufficient Balance..." Driver code is as follows: Create an object as follows: C1 = Cust_Account("ABCD","SAVINGS",100,25000.00) print(C1.deposit(1000)) print(C1.withdraw(5500)) what is the final balance in the account?	
	b)	Write a python script to count the number of lines, number of words in each line of the file. **Note:** Open a file in a required mode. Perform the operation required using any of the read functions. Display the result. Close the opened files at the end.	06

	c)	Complete of the following code in python.
		class MyContainer:
		def __init__(self,mylist)
		#complete the code
		
		def __iter__(self):
		# complete the code
		
		def __next__(self):
		#complete the code
		
		Driver code is given:
		A=['Hello', "welcome" , 'to', 'the', "world" ,'of ',"Computers"]
		C = MyContainer(A)
		for w in in C:
		print(w)
		What is the output generated?
			06