

Please check that this question paper contains 09 questions and 02 printed pages within first ten minutes.

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Uni. Roll No. ....

Program: B.Tech. (Batch 2018 onward)

Semester: 4

Name of Subject: Python Programming

Subject Code: PCIT-105

Paper ID: 16234

Time Allowed: 03 Hours

EVENING

Max. Marks: 60

NOTE:

12 JAN 2023

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

**Part – A**

[Marks: 02 each]

Q1.

- a) Suppose your script attempts to print the value of a variable that has not yet been assigned a value. How does the Python interpreter react?
- b) Discuss four string manipulation methods.
- c) In Python, what is the distinction between a list and a tuple?
- d) In what way is a recursive design different from a top-down design?
- e) What is object instantiation? What are the options at the programmer's disposal during this process?
- f) Describe two fundamental differences between terminal-based user interfaces and GUIs.

**Part – B**

[Marks: 04 each]

Q2. Assume that the variable data refers to the list [5, 3, 7]. Write the values of the following expressions:

a. data [2]	b. data [-1]	c. len (data)	d. data [0:2]	e. 0 in data	f. data + [2, 10, 5]
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- Q3. Write a while loop in python that computes the factorial of a given integer N.
- Q4. A student complains that defining functions to use in his programs is a lot of extra work. He says he can finish her programs much more quickly if he just writes them using the basic operators and control statements. State three reasons why his views is shortsighted.

- Q5. Why is it a good idea to write and test the code for laying out a window's components before you add the methods that perform computations in response to events.
- Q6. Class B extends class A. Class B defines an `__str__` method that returns the string representation of its instance variables. Class B defines a single instance variable named `age`, which is an integer. Write the code to define the `__str__` method for class B. This method should return the combined string information from both classes. Label the data for `age` with the string "Age: ".
- Q7. What are the different ways to generate random numbers in Python? With Example

**Part – C**

**[Marks: 12 each]**

- Q8. Elaborate various operators available in Python with proper code. **EVENING**

OR

**12 JAN 2023**

Write a GUI-based program that allows the user to convert temperature values between degrees Fahrenheit and degrees Celsius. The interface should have labelled entry fields for these two values. These components should be arranged in a grid where the labels occupy the first row and the corresponding fields occupy the second row. At start-up, the Fahrenheit field should contain 32.0, and the Celsius field should contain 0.0. The third row in the window contains two command buttons, labeled `>>>>` and `<<<<`. When the user presses the first button, the program should use the data in the Fahrenheit field to compute the Celsius value, which should then be output to the Celsius field. The second button should perform the inverse function.

- Q9. Write a script named `dif.py`. This script should prompt the user for the names of two text files and compare the contents of the two files to see if they are the same. If they are, the script should simply output "Yes". If they are not, the script should output "No", followed by the first lines of each file that differ from each other. The input loop should read and compare lines from each file. The loop should break as soon as a pair of different lines is found.

OR

Define and test a function `myRange`. This function should behave like Python's standard `range` function, with the required and optional arguments, but it should return a list. Do not use the `range` function in your implementation

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