



First Semester B.E./B.Tech. Degree Examination, June/July 2025

**Introduction to Python Programming**

Max. Marks: 100

Time: 3 hrs.

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M: Marks, L: Bloom's level, C: Course outcomes.

| Module – 1 |    |  |   | M  | L   | C |
|------------|----|--|---|----|-----|---|
| Q.1        | a. | Explain the different data types supported in Python with syntax and examples.   | 6 | L2 | CO1 |   |
|            | b. | Develop a program in Python to find the sum of n natural numbers. Read the number from user.   | 6 | L3 | CO1 |   |
|            | c. | Define Exception and illustrate the concept of exception handling in Python using suitable example.  | 8 | L2 | CO1 |   |
| OR         |    |  |   |    |     |   |
| Q.2        | a. | Define the rules to develop a user-defined function in Python and define a function called exchange( ) to swap two numbers, show the output.   | 6 | L2 | CO1 |   |
|            | b. | Develop a program to find the largest among the three numbers.   | 6 | L3 | CO1 |   |
|            | c. | Explain the syntax and example of the following statements<br>i) for loop ii) While loop iii) if-elif-else.  | 8 | L2 | CO1 |   |
| Module – 2 |    |  |   |    |     |   |
| Q.3        | a. | List out the augmented operators and give the examples to illustrate the same.   | 7 | L1 | CO2 |   |
|            | b. | Write a program to show the traversing of key-value pairs in dictionaries.   | 7 | L3 | CO2 |   |
|            | c. | Explain the random choice and random shuffle function with lists.  | 6 | L2 | CO2 |   |
| OR         |    |  |   |    |     |   |
| Q.4        | a. | Describe Lists in Python and examples to create list, list concatenation and replication.  | 7 | L1 | CO2 |   |
|            | b. | Write a function named displayInventory( ) that would take any possible "inventory" and display it like the following:<br>Inventory:<br>12 arrow, 42 gold coin, 1 rope, 6 torch, 1 dagger, Total number of items : 62. | 7 | L3 | CO2 |   |
|            | c. | Explain with an example slicing, in and not in operator with strings.  | 6 | L2 | CO2 |   |
| Module – 3 |    |  |   |    |     |   |
| Q.5        | a. | Write a program to accept string and display total number of alphabets.  | 8 | L3 | CO3 |   |

|            | b. | Discuss various methods available to remove the white spaces in a string with examples.   | 6 | L2 | CO3 |  |
|------------|----|---|---|----|-----|--|
|            | c. | Differentiate between absolute and relative paths in specifying file paths.   | 6 | L2 | CO3 |  |
| OR         |    |   |   |    |     |  |
| Q.6        | a. | Write a program in Python to perform reading and writing operations on files.   | 8 | L3 | CO3 |  |
|            | b. | List the string methods to analyze strings. Explain any four with syntax and examples.  | 6 | L2 | CO3 |  |
|            | c. | Explain how to save and retrieve variables with the Shelve module.  | 6 | L2 | CO3 |  |
| Module – 4 |    |   |   |    |     |  |
| Q.7        | a. | Discuss how shutil module helps to perform the operations such as copy, move, rename and delete files.  | 8 | L2 | CO3 |  |
|            | b. | What is logging? Explain the logging levels to categorize the log messages in Python.   | 6 | L2 | CO3 |  |
|            | c. | Write an algorithm for implementation of multi clipboard functionality.   | 6 | L3 | CO3 |  |
| OR         |    |   |   |    |     |  |
| Q.8        | a. | Explain the backing up a folder into a zip, with a program code.  | 8 | L2 | CO3 |  |
|            | b. | Describe how Raise exception is done using an example.  | 6 | L2 | CO3 |  |
|            | c. | Differentiate between Step over, Step In and Step Out buttons in the debugger.  | 6 | L3 | CO3 |  |
| Module – 5 |    |   |   |    |     |  |
| Q.9        | a. | Differentiate between the class method and instance method with suitable program examples.  | 8 | L3 | CO4 |  |
|            | b. | Define a function which takes TWO objects representing complex numbers and returns new complex number with a addition of two complex numbers. Define a suitable class 'Complex' to represent the complex number. Develop a program to read N (N >= 2) complex numbers and to compute the addition of N complex numbers. <b>CMRIT LIBRARY BANGALORE - 560 037</b>  | 8 | L3 | CO4 |  |
|            | c. | Write a __str__ method for the Point class. Create a Point object and print it.   | 4 | L2 | CO4 |  |
| OR         |    |   |   |    |     |  |
| Q.10       | a. | Write a class with following criteria<br>Class name : Flower<br>Objects : Lilly, Rose, Hibiscus<br>Attributes : price, color, smell<br>Methods : get( ), display ( )  | 8 | L3 | CO4 |  |
|            | b. | Develop a program that uses class Student which prompts the user to enter marks in three subjects and calculates total marks, percentage and displays the score card details. [Hint : Use list to store the marks in three subjects and total marks. Use __init__( ) method to initialize name, USN and the list to store marks and total. Use getMarks( ) method to read marks into the list, and display( ) method to display the score card details. | 8 | L3 | CO4 |  |
|            | c. | Describe poly morphism with example.  | 4 | L2 | CO4 |  |

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