

Roll.No.

24UACT2003

SHRIMATHI DEVKUNVAR NANALAL BHATT VAISHNAV COLLEGE FOR WOMEN
(AUTONOMOUS)

(Affiliated to the University of Madras and Re-accredited with 'A+' Grade by NAAC)
Chromepet, Chennai - 600 044.

B.C.A. - END SEMESTER EXAMINATIONS - NOVEMBER 2025
SEMESTER - II

24UACT2003 - Python Programming

Total Duration : 2 Hrs.30 Mins.

Total Marks : 60

Section B

Answer any **SIX** questions ($6 \times 5 = 30$ Marks)

1. Explain the structure of a Python Program. Detail the basic String operators and provide an example of String slicing.
2. Differentiate between the continue and break statements within the context of Loop Control Statements. Illustrate your answer with a suitable Python code snippet for each.
3. Define the Scope and Lifetime of Variables in a function. Explain the utility of Lambda Functions with a simple example.
4. Describe the characteristics and use cases of Lists, Tuples and Dictionaries. Also, explain how to use the Numpy module for operations on arrays.
5. Explain the process of creating, reading, and writing on Text and Binary Files. Discuss the role of the Try-except-else-finally block in Exception Handling.
6. Explain the concept of Basic Data Types and type conversion. Give examples of Identifiers and Keywords in Python.
7. Elaborate on Conditional Flow statements (e.g., if, elif, else). Write a program snippet demonstrating a scenario involving Nested control Flow.
8. Discuss the importance of Data visualization. Explain how to plot a Histogram and Pi charts using a suitable Python library.

Section C

Answer any **THREE** questions ($3 \times 10 = 30$ Marks)

9. Explain the fundamental elements of Python programming, elaborating on the roles of Identifiers and Keywords, detailing the process of type conversion, and demonstrating how string slicing and joining operations are performed.

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10. Write a comprehensive Python program that effectively applies the concepts of conditional and looping statements by solving a problem that requires the use of both an if-elif-else conditional flow and a loop control statement, and strategically incorporates the break and continue statements to manage the flow within the loop.
11. Thoroughly explain the process of defining and calling a function in Python, including a discussion on the Scope and Lifetime of Variables, and provide a detailed illustration of the syntax and utility of Lambda Functions and Default Parameters.
12. Demonstrate the distinct uses of Lists, dictionaries, and Tuples by explaining the mutability of each and outlining how commonly used built-in functions or methods are applied to each structure, and subsequently detail how the Math and NumPy modules are utilized for array and integer operations.
13. Identify and explain the file handling operations necessary for both Text and Binary Files, including a description of the roles of the Pickle Module and the operations for Reading and writing of CSV and JSON files, and finally discuss the complete mechanism and purpose of the Try-except-else-finally block for robust program design.
