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.Sc. CS with CGS - END SEMESTER EXAMINATIONS APRIL - 2024
SEMESTER -VI
21UCGCT6011 - Python Programming and Data Structure

Total Duration : 2 Hrs. 30 Mins.   Total Marks : 60

Section B

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

1. Define Python interpreter and explain its role in executing Python code.

2. Differentiate between int, float, Boolean, string, and list data types in Python. Give examples for each.

3. Describe conditional statements in Python. Give an example of an "if" statement and its syntax.

4. Explain the fundamentals of functions in Python, and explain how to define and call functions.

5. Explain the basic operations that can be performed on lists in Python.

6. Discuss the role of arrays in algorithms. Analyse the time and space complexity considerations associated with these algorithms.

7. Explain the concept of a linked list in data structures.

8. Discuss the Linear Search algorithm for searching elements in a list. Give an example and analyse its time complexity.

Section C

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

9. Explain the concepts of modules and functions in Python with example.

10. Discuss the concept of iteration in Python. Give an examples of different types of loops (e.g., "for" and "while") and explain when each type is appropriate in a program.

11. Explain the operations and methods associated with dictionaries in Python with suitable examples.

12. Briefly discuss the concept of stack and queue.

13. Explain the basics of graphs and their representation in computer science. Discuss the different types of graphs.

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