

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.Mathematics - END SEMESTER EXAMINATIONS - APRIL 2025

SEMESTER - VI

24UMAET6B03 - Programming, Data Structures and Algorithms using Python

Total Duration : 1 Hrs.30 Mins.

Total Marks : 40

Section B

Answer any **TEN** questions ($10 \times 2 = 20$ Marks)

1. What is Python interpreter?
2. Define range ().
3. What is handling exceptions?
4. Describe Matrix multiplication.
5. Differentiate between Int vs float.
6. What is quicksort?
7. Define String format () method.
8. Write a short note on Classes and objects in Python.
9. Distinguish between interpreters vs compilers.
10. What is recursive functions?
11. What is Backtracking?
12. Define Memoization.

Section C

Answer any **FOUR** questions ($4 \times 5 = 20$ Marks)

13. Explain Euclid's algorithm for GCD in Python.
14. Write a note on Operations on numbers in Python.
15. Explain tuples and dictionaries in Python programming.
16. How are Sets, Stacks, and Queues implemented and used in Python?
17. How do you perform find, insert, and delete operations in a Binary Search Tree?
18. Explain Selection sort with simple Python functions.
