

Data Structure Using Python (313306)

Most repeated questions — MSBTE K-scheme papers S-2026, W-2025, S-2025, W-2024

How to read: **Asked in** shows the MSBTE papers where the same question came (same idea, any wording).

High = came in 3 or 4 of the 4 papers, **Medium** = 2 papers, **Low** = 1 paper. Prepare High ones first. Unit grouping is by topic (as per the K-scheme course content).

Top questions (came in all 4 papers)

1. NumPy: methods / built-in functions / creating and initialising arrays (4/6 marks)
2. Inheritance: types / single / multiple — program (2/4/6 marks)
3. Binary search tree — construct / explain (4/6 marks)

Unit I — Python basics, operators, control flow, list / tuple / set / dictionary

Question / topic	Marks	Asked in	Probability
Features of Python (list / explain any four)	2/4	S-26, S-25, W-24 (3/4)	High
Tuple: basic operations / delete-update values / output of tuple code	2/4/6	S-26, W-25, W-24 (3/4)	High
Set: create, access, update, delete values / define and create sets	4/6	W-25, S-25, W-24 (3/4)	High
Dictionary: define / access, update, delete / program on dictionary	2/4	W-25, S-25, W-24 (3/4)	High
Simple programs: number pattern, Fibonacci, sum of digits, addition-subtraction	4/6	W-25, S-25, W-24 (3/4)	High
Data types in Python — list all / describe any two with example	4	W-25, S-25 (2/4)	Medium
Operators: list operators, relational, membership & identity, walrus (:=)	2/4	S-26, W-25 (2/4)	Medium
Control statements / loop control statements (break, continue, pass) with example	4	S-26, W-24 (2/4)	Medium
List, tuple, set, dictionary — explain / differentiate	2/6	S-26, S-25 (2/4)	Medium
Program on list: largest, smallest, sum of elements	6	S-26, W-24 (2/4)	Medium
Terms: identifiers, keywords, indentation, variables, comments	6	S-25 (1/4)	Low
Global vs local variables	2	S-26 (1/4)	Low

Unit II — Functions, modules, packages and NumPy

Question / topic	Marks	Asked in	Probability
NumPy: methods / built-in functions / creating and initialising arrays	4/6	S-26, W-25, S-25, W-24 (4/4)	High
Built-in functions — describe any four with example	4	S-26, W-25, S-25 (3/4)	High
Program: module for calculator / addition-subtraction / multiplication-division	4/6	S-26, W-25, W-24 (3/4)	High
Module: describe, create, import, import object, rename (alias)	2/4/6	S-26, W-25 (2/4)	Medium
Package: steps to create / module vs package / built-in packages	2/4	S-25, W-24 (2/4)	Medium
User-defined functions for arithmetic operations	4	S-25 (1/4)	Low

Unit III — Object oriented programming in Python

Question / topic	Marks	Asked in	Probability
Inheritance: types / single / multiple — program	2/4/6	S-26, W-25, S-25, W-24 (4/4)	High
Method overloading and overriding — explain / differentiate / program	4/6	S-26, W-25, S-25 (3/4)	High
Data abstraction, data encapsulation, data hiding	2/4	S-26, W-25, S-25 (3/4)	High
Define OOP and features / class and object	2	S-25, W-24 (2/4)	Medium
Class program: rectangle with area and perimeter	6	W-24 (1/4)	Low

Unit IV — Linear data structures, searching and sorting

Question / topic	Marks	Asked in	Probability
Linear and non-linear data structures — define / examples	2	W-25, S-25, W-24 (3/4)	High
Array vs list / define array, 2-D array program	4/6	S-26, W-25, S-25 (3/4)	High
Linear search — explain / program; linear vs binary search	4	S-26, W-25, W-24 (3/4)	High
Sorting: types / describe sorting / bubble sort program	2/4/6	S-26, W-25, W-24 (3/4)	High
Binary search (recursive program)	4	S-26, S-25 (2/4)	Medium
Linked list: singly / doubly — explain with diagram / program	4/6	S-26, W-24 (2/4)	Medium
Infix to postfix / prefix conversion	4/6	S-25, W-24 (2/4)	Medium

Define stack and queue	2	S-26 (1/4)	Low
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Unit V — Trees and graphs

Question / topic	Marks	Asked in	Probability
Binary search tree — construct / explain	4/6	S-26, W-25, S-25, W-24 (4/4)	High
Tree traversal: inorder, preorder, postorder (given tree / algorithm / explain)	2/4/6	S-26, W-25, W-24 (3/4)	High
Tree terminology (internal node, degree, level, height ...)	2/4	S-26, S-25, W-24 (3/4)	High
BFS and DFS — explain / differentiate	6	W-25, S-25 (2/4)	Medium
Define tree, graph, spanning tree	2	S-26, W-24 (2/4)	Medium
Spanning tree properties	4	S-25 (1/4)	Low
Applications of trees	4	S-25 (1/4)	Low

Note: Based on the MSBTE question papers W-2024 to S-2026 available on msbte.ac.in (K-scheme). Practice guidance only — not a prediction of the exam and not an official MSBTE document. Study the full syllabus. Free for students — anandatechnologies.in