

KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

THOOTHUKUDI - 628 003

(5 Pages)

Reg. No:

Question Code No : 25000810

Course Code : 24PEMA32

PG Degree - End Semester Examinations, November 2025

Third Semester

M.Sc MATHEMATICS

Mathematical Python Theory

(For those who joined in July 2024 onwards)

Time : 3Hours

Maximum : 75 Marks

PART - A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer:

- _____ does not include details like variable, declaration, subroutines.
 - Flowchart
 - Pseudo code
 - Algorithm
 - Programming language
- The process of executing the individual statement in given

order

- (a) Control flow (b) State
- (c) Sequence (d) Pseudo code

3. _____ is collection of well defined and computable instructions to execute and get proper output.

- (a) Algorithm (b) Selection
- (c) Iteration (d) Pseudo code

4. _____ is a method of solving a problem through a smaller version of same problem.

- (a) Iteration (b) Brute force
- (c) Recursion (d) Base case

5. The command `>>> type ('42.0')` return.

- (a) `<class 'float'>` (b) `<class 'str'>`
- (c) `<class 'int'>` (d) None

6. _____ is combination of values, variables and operators.

- (a) Expression (b) Operator
- (c) Data types (d) Variables

7. A _____ is a file that contains a collection of related function.

- (a) Composition (b) Module
- (c) Stacks (d) Header

8. _____ variable can only be used inside its function.

- (a) Global (b) Local

(c) Public (d) Void

9. If the index is not provided pop deletes and return the _____ element in the list.

(a) First (b) Random

(c) Last (d) None

10. _____ is sequence of values.

(a) String (b) List

(c) Tuple (d) None

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 250 words.

11. (a) What are the purposes of a flowchart? State the rules for drawing a flowchart.

(OR)

(b) Explain briefly about logic structure of pseudo code.

12. (a) Write in detail about strategies for developing algorithm.

(OR)

(b) Write an algorithm and flowchart to find greatest of two numbers.

13. (a) Describe how variables are named in python.

(OR)

(b) Discuss about values in python programming.

14. (a) Explain about parameters and arguments.

(OR)

(b) Explain usage of while statement in python programming.

15. (a) Describe process of traversal in strings.

(OR)

(b) Explain about list slices.

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 600 words.

16. (a) Discuss building blocks of algorithm in detail.

(OR)

(b) By defining High level language, explain in detail how would you translate high level language to machine language.

17. (a) Describe in detail about algorithmic problem solving technique.

(OR)

(b) Explain in detail about any five pseudo code for mathematical problem.

18. (a) What is python interpreter? Explain its mode.

(OR)

(b) Write about various types of operators in python.

19. (a) Describe various types of conditional statements used in python.

(OR)

(b) Explain briefly about fruitful functions.

20. (a) Write about various list operation and list method in detail.

(OR)

(b) Explain the method of handling strings in python.

