

# MCS-E5 Python Programming

## Unit- I

1. Introduction to Computers, Characteristics of Computers, Uses of Computers
2. Types and Generations of Computers
3. Units of a computer, CPU, ALU

## Unit - II

4. Memory Hierarchy, Registers
5. I/O devices

## Unit - III

6. Concept of problem solving , Problem definition, Program design
7. Debugging, Types of errors in programming, Documentation
8. Algorithms
9. Flowchart

## Unit - IV

10. Flowchart using Raptor Tool
11. Pseudocode
12. Structured programming concepts
13. Programming methodologies viz. top-down and bottom-up programming

## Unit - V

14. Structure of a Python Program, Elements of Python
15. Python Interpreter, Using Python as calculator
16. Python shell, Indentation, Atoms, Identifiers and keywords
17. Literals, Strings

## Unit - VI

18. Types of Operators
19. Input and Output Statements
20. Conditional Statements

## Unit - VII

21. Control statements : while and for statements, nested loops
22. Difference between break, continue and pass
23. Lists

24. Tuples

### **Unit - VIII**

- 25. Dictionary, Date and time
- 26. Defining Function, User Defined Functions
- 27. Passing Arguments and Lambda Functions
- 28. Creating class and objects, Constructors

### **Unit - IX**

- 29. Getter and setter methods, static methods
- 30. Inheritance
- 31. Exception Handling

### **Unit - X**

- 32. Modules, import statement
- 33. Packages
- 34. File handling
- 35. Event Driven Programming

### **Unit - XI**

- 36. GUI Programming
- 37. Database Programming
- 38. Data Analytics with Python

### **Unit - XII**

- 39. Client server programming with Python
- 40. Internet Data Handling and web Programming

## **Books and references**

### **References:**

1. S.Kuppuswamy, S.Malliga, C.S.Kanimozhi Selvi, K.Kousalya. Problem Solving and Programming. 2019, Tata McGraw Hill.
2. Bill Lubanovic, Introducing Python Modern Computing in Simple Packages, First Edition, O'Reilly Media, 2014.
3. Martin C. BrownPython. The Complete Reference Paperback, 2018
4. R. Nageswara RaoCore Python Programming Paperback, 2018
5. Yashavant Kanetkar Let Us Python, 2019