

SYLLABUS 2020-2021

CLASS: 12

SUBJECT: COMPUTER SCIENCE

| UNIT | CONTENT |
|---|--|
| 1 Function | 1.1 Introduction 1.2 Function with respect to Programming language |
| 2 Data Abstraction | 2.1 Data Abstraction - Introduction 2.2 Abstract Data Types 2.3 Constructors and Selectors |
| 3 Scoping | 3.1 Introduction 3.2 Variable Scope 3.3 LEGB rule 3.4 Types of Variable Scope |
| 4 Algorithmic Strategies | 4.1 Introduction to Algorithmic strategies 4.4 Algorithm for Searching Techniques 4.5 Sorting Techniques |
| 5 Python - Variables and Operators | 5.1 Introduction 5.2 Key features of Python 5.3 Programming in Python 5.4 Input and Output functions 5.5 Comments in Python 5.6 Indentation 5.7 Tokens |
| 6 Control Structures | 6.1 Introduction 6.2 Control structures |
| 7 Python Functions | 7.1 Introduction - Types of functions 7.2 Defining functions 7.3 Calling a function 7.4 Passing Parameters 7.6 Anonymous functions 7.7 Return Statement 7.8 Scope of Variables |

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| 8 Strings and String Manipulations | 8.1 Introduction 8.2 Creating Strings 8.3 Accessing characters in a string 8.4 Modifying and Deleting String 8.5 String operators |
| 9 Lists, Tuples, Sets and Dictionaries | 9.1 Introduction To List 9.2 Tuples 9.3 Sets |
| 10 Python Classes and Objects | 10.1 Introduction To Classes and Objects 10.2 Defining Classes 10.3 Creating Objects 10.4 Accessing Class Index 10.5 Class Methods 10.6 Constructors and Destructors in Python 10.7 Public and Private Members |
| 11. Database Concepts | 11.1 Data 11.2 Information 11.3 Database 11.4 DBMS Concepts 11.5 Database Structure |
| 12. Structured Query Language | 12.1 Introduction To SQL 12.4 Creating Database 12.5 Components of SQL 12.7 SQL Commands and Functions |
| 13 Python and CSV Files | 13.1 Introduction 13.2 Difference between CSV and XLS file formats 13.3 Purpose Of CSV File 13.4 Creating a CSV file using Notepad (or any text editor) 13.6 Read and write a CSV file Using Python 13.6.1 Read a CSV File Using Python 13.7 Writing Data Into Different Types in Csv 13.7.1 Creating A New Normal CSV File 13.7.2 Modifying An Existing File 13.7.3 CSV Files With Quotes |

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| 14 Importing C++ Programs in Python | 14.1 | Introduction |
| | 14.2 | Scripting Language |
| | 14.3 | Applications of Scripting Languages |
| | 14.5 | Importing C++ Files in Python |
| | 14.6 | Python Program to import C++ |
| | 15 Data Manipulation through SQL | |
| | 15.2 | SQLite |
| | 15.3 | Creating a Database using SQLite |
| | 15.4 | SQL Query Using Python |
| | 15.4.1 | SELECT Query |
| | 15.6 | Querying A Date Column |
| | 15.7 | Aggregate Functions |
| | 15.8 | Updating A Record |
| | 15.9 | Deletion Operation |
| 16 Data Visualization using Pyplot | 16.1 | Data Visualization Definition |
| | 16.2 | Getting Started |
| | 16.3 | Special Plot Types |

| PRACTICALS | |
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| CLASS: 12 | |
| SUBJECT: COMPUTER SCIENCE | |
| Sl.No | Topic |
| 1 | PY1(a) Calculate Factorial PY1(b) Sum of Series |
| 2 | PY2(a) Odd or Even PY2(b)Reverse the String |
| 3 | PY3 Generate values and remove odd numbers |
| 4 | PY4 Generate Prime numbers and Set Operations |
| 5 | PY5 Display a String elements - Using Class |