



DRAVID OPEN SECONDARY AND HIGHER SECONDARY EDUCATION COUNCIL

Head Office:-RD number 1, mohalla Badh Adilabad, Telangana 504001

Verification Address: - 3008b/12 Church Road Dashmesh Nagar Navagaon Mohali Punjab-160103

SYLLABUS COMPUTER SCIENCE

CLASS 12 COMPUTER SCIENCE SYLLABUS

□ Syllabus Overview

Unit 1: Computational Thinking and Programming – II (Python)

(Weightage: 30 Marks)

Revision of Python basics (Class XI topics)

- Tokens, data types, operators, expressions
- Conditional and iterative statements

Functions in Python

- User-defined functions, parameters, return values
- Built-in functions
- Scope and lifetime of variables

File Handling

- Text files, Binary files, CSV files
- Reading, writing, and updating files

Data Structures:

- Lists, stacks, and queues using lists

Exception Handling

- Try, Except, Else, Finally

Recursion

- Concept and examples

Unit 2: Computer Networks

(Weightage: 15 Marks)

Introduction to networks

- Types: LAN, MAN, WAN
- Network devices: Modem, Router, Switch, Access Point, Gateway

Network Topologies: Star, Bus, Ring

- Transmission Media: Twisted pair, Coaxial, Optical fiber, Radio waves
- Network Protocols: TCP/IP, HTTP, HTTPS, FTP, SMTP, POP3

Network Security:

- Firewall, cookies, viruses, malware, encryption
- Cyber ethics, digital footprint, cyber safety

IP Addressing: IPv4, IPv6, domain names, DNS, URL

Unit 3: Database Management System (DBMS)

(Weightage: 15 Marks)

Database concepts:

- Data, information, database, DBMS, advantages

Relational Model:

- Table, tuple, attribute, primary key, foreign key

Structured Query Language (SQL):

- CREATE, INSERT, UPDATE, DELETE
- SELECT with WHERE, GROUP BY, HAVING, ORDER BY
- Aggregate functions: COUNT(), SUM(), AVG(), MAX(), MIN()
- Joins and nested queries

Unit 4: Society, Law, and Ethics (SLE)

(Weightage: 10 Marks)

- Digital footprint and online safety
- Cybercrime and cyber laws
- Intellectual Property Rights (IPR)

- Open source vs proprietary software
- E-waste management

□ Practical Work (30 Marks Total)

| Component | Marks |
|-------------------------------|----------|
| Python Programming | 12 |
| SQL Queries | 5 |
| Practical File (Python + SQL) | 5 |
| Project Work | 5 |
| Viva Voce | 3 |
| Total | 30 Marks |

