COMPUTER SCIENCE (083)
SYLLABUS OF CLASS XII
SESSION: 2026-27

Theory : 70
Practical : 30

Date/Month	Unit	Chapter/Topics
6th April to 17th April	**Unit I:** Computational Thinking and Programming – 2	Revision of Python topics covered in Class XI.
20th April to 1st May	**Unit I:** Computational Thinking and Programming – 2	**Functions**: types of function (built-in functions, functions defined in module, user defined functions), creating user defined function, arguments and parameters, default parameters, positional parameters, function returning value(s), flow of execution, scope of a variable (global scope, local scope)
4th May to 8th May	**Unit I:** Computational Thinking and Programming – 2	**Exception Handling:** Introduction, handling exceptions using try-except-finally blocks Introduction to files, types of files (Text file, Binary file, CSV file), relative and absolute paths
11th May to 20th May	**Unit I:** Computational Thinking and Programming – 2	**Text file:** opening a text file, text file open modes (r, r+, w, w+, a, a+), closing a text file, opening a file using with clause, writing/appending data to a text file using write() and writelines(), reading from a text file using read(), readline() and readlines(), seek and tell methods, manipulation of data in a text file
21st May to 26th May	**Unit I:** Computational Thinking and Programming – 2	**Binary file:** basic operations on a binary file: open using file open modes (rb, rb+, wb, wb+, ab, ab+), close a binary file, import pickle module, dump() and load() method, read, write/create, search, append and update operations in a binary file
1st July to 10th July	**Unit I:** Computational Thinking and Programming – 2	**CSV file:** import csv module, open / close csv file, write into a csv file using writer(),writerow(),writerows() and read from a csv file using reader()
13th July to 17th July	**Unit I:** Computational Thinking and Programming – 2	**Data Structure:** Stack, operations on stack (push & pop), implementation of stack using list.
20th July to 24th July	**Unit III:** Database Management	**Database concepts:** introduction to database concepts and its need. **Relational data model:** relation, attribute, tuple, domain, degree, cardinality, keys (candidate key, primary key, alternate key, foreign key)
27th July to 7th August	**Unit III:** Database Management	**Structured Query Language:** introduction, Data Definition Language and Data Manipulation Language, data type (char(n), varchar(n), int, float, date), constraints (not null, unique, primary key), create database, use database, show databases, drop database, show tables, create table,describe table. Alter table (add and remove an attribute, add and remove primary key), drop table.

10th August to 21st August	**Unit III:** Database Management	Insert, delete, select, operators (mathematical, relational and logical), aliasing, distinct clause, where clause, in, between, order by, meaning of null, is null, is not null, like, update command, delete command. Aggregate functions (max, min, avg, sum, count), group by, having clause. **Joins:** cartesian product on two tables, equi-join and natural join
24th August to 4th September	**Unit III:** Database Management (Database Connectivity)	**Interface of python with an SQL database:** connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using connect(), cursor(), execute(), commit(), fetchone(), fetchall(), rowcount, creating database connectivity applications, use of %s format specifier or format() to perform queries
7th September to 11th September	**Unit II:** Computer Networks	**Evolution of networking:** introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET) **Data communication terminologies:** concept of communication, components of data communication (sender,receiver, message, communication media, protocols), measuring capacity of communication media (bandwidth, data transfer rate), IP address, switching techniques (Circuit switching, Packet switching)
14th September to 25th September	**Unit II:** Computer Networks	**Transmission media:** Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves) . **Network devices** (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card). **Network topologies and Network types:** types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree). **Network protocol:** HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP
28th September to 1st October	**Unit II:** Computer Networks	**Introduction to web services:** WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting
5th October to 15th October	**Revision**	