	CLASS: XII		COMPUTER SCIENCE (083)
SN	Month	No. of working days	Name of the chapter/topic to be covered
1	April-May	23	**Unit I: Computational Thinking and Programming – 2** • Revision of Python topics covered in Class XI. (Introduction, conditional statements, iteration, String, List, Tuple, Dictionary, random module)
2	June	8	• **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)
	July	25	● **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 • **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
3	August	23	• **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 **CSV file**: import csv module, open / close csv file, write into a csv file using csv.writerow() and read from a csv file using csv.reader( ) Data-structure: Stack, operations on stack (push & pop), implementation of stack using list.
4	September	24	**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) 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, Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting
			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)
			• 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, insert, delete
5	October	20	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
6	November	23	• **Interface of python with an SQL database**: connecting SQL with Python, performing insert, update, delete queries using cursor, display data by using fetchone(), fetchall(), rowcount, creating database connectivity applications. se of %s format specifier or format() to perform queries
7	December	18	**Comprehensive Revision, Project Completion**
8	January	24	**Comprehensive Revision**
9	February	23	**AISSCE Practical EXAMINATION and Theory EXAMINATION**
10	March	23	**Theory EXAMINATION**