

DELHI POLICE PUBLIC SCHOOL

Annual Syllabus: 2024-25

Subject: COMPUTER SCIENCE

Class: XII

MONTH	UNIT/CHAPTER/TOPIC
MARCH	Unit I: Computational Thinking and Programming - 2 Revision of the basics of Python covered in Class XI. Unit III: Database Management Database concepts: introduction to database concepts and its need Relational data model: relation, attribute, tuple, domain, degree, cardinality
APRIL	Keys Concept (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, 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
MAY	aggregate functions (max, min, avg, sum, count), group by, having clause, joins: cartesian product on two tables, equi-join and natural join 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
JULY	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) 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()
AUGUST	<p>seek and tell methods, manipulation of data in a text file</p> <p>Binary File: Basic operations on a binary file: Open (filename – absolute or relative path, mode), Close a binary file, Pickle Module – methods load and dump; Read, Write/Create, Search, Append and Update operations in a binary file.</p> <p>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()</p> <p>Data-structures: Stack, Operation on Stack(Push & Pop), implementation of Stack using list.</p>
SEPTEMBER	REVISION, HALF YEARLY EXAM comences,Evaluation
OCTOBER	<p>Unit II: Computer Networks :</p> <p>Evolution of networking: introduction to computer networks, evolution of networking (ARPANET, NSFNET, INTERNET)</p> <p>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)</p> <p>Transmission media: Wired communication media (Twisted pair cable, Co-axial cable, Fiber-optic cable), Wireless media (Radio waves, Micro waves, Infrared waves)</p>
NOVEMBER	<p>Network devices (Modem, Ethernet card, RJ45, Repeater, Hub, Switch, Router, Gateway, WIFI card)</p> <p>Network topologies and Network types: types of networks (PAN, LAN, MAN, WAN), networking topologies (Bus, Star, Tree)</p> <p>Network protocol: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP</p> <p>Introduction to web services: WWW, Hyper Text Markup Language (HTML), Extensible Markup Language (XML), domain names, URL, website, web browser, web servers, web hosting</p>
DECEMBER	REVISION, PRE BOARD EXAM -1
JANUARY	PREBOARD EXAM -2, BOARD PRACTICAL EXAM COMMENCES
FEBRUARY	BOARD PRACTICAL EXAMS CONTINUES, BOARD THEORY EXAM COMMENCES COMMENCES