

CBSE Class 12 Computer Science (CS)

Unit-wise syllabus and marks for the 2026-27 session.

UNITS 3	THEORY MARKS 70	SESSION 2026-27
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Exam pattern. Total 100 marks = Theory 70 + Practical 30. Theory paper (3 hours): Unit I Computational Thinking and Programming-2 = 40 marks, Unit II Computer Networks = 10 marks, Unit III Database Management = 20 marks. Practical (30 marks): Lab Test 12 (Python program 8 + SQL queries 4), Report/Practical File 7, Project 8, Viva Voce 3.

Practical. Practical work (30 marks) requires a practical file with a minimum of 15 Python programs (file handling, stacks, CSV, random numbers, etc.) and SQL query sets, plus a Python-SQL based project. Assessed via a lab test (live Python program and SQL queries on one/two tables), the report file, the project, and a viva voce.

#	UNIT AND TOPICS	MARKS
1	Unit I: Computational Thinking and Programming - 2 Revision of Python basics from Class XI; Functions: scope, parameter passing, passing mutable/immutable objects, returning values, default and keyword arguments; Built-in functions, functions defined in modules (math, random, statistics), user-defined functions; Exception handling using try, except, finally and raise; Introduction to files: types of files (text, binary, CSV); relative and absolute paths; Text files: opening modes (r, r+, w, w+, a, a+), reading/writing (read, readline, readlines, write, writelines), close, seek, tell; Binary files: pickle module - dump() and load(); reading, writing, searching, appending and updating records; CSV files: csv module - reading and writing using reader() and writer()	40 marks
2	Unit II: Computer Networks Evolution of networking: ARPANET, NSFNET, Internet; Data communication terminologies: concept of communication, sender, receiver, message, channel; bandwidth and data transfer rate (bps); IP address; switching techniques (circuit, packet); Transmission media: wired (twisted pair, co-axial, optical fibre) and wireless (microwave, radio, satellite); Network devices: modem, hub, switch, repeater, router, gateway, NIC; Network topologies: Bus, Star, Tree; Types of networks: PAN, LAN, MAN, WAN; Network protocols: HTTP, FTP, PPP, SMTP, TCP/IP, POP3, HTTPS, TELNET, VoIP	10 marks
3	Unit III: Database Management Database concepts: relational data model, relation, attribute, tuple, domain, degree, cardinality; Keys: candidate key, primary key, alternate key, foreign key; Structured Query Language (SQL): data types (char, varchar, int, float, date); DDL commands: CREATE TABLE, ALTER TABLE, DROP TABLE; DML commands: INSERT, UPDATE, DELETE, SELECT; SQL clauses and functions: WHERE, IN, BETWEEN, DISTINCT, ORDER BY, GROUP BY, HAVING, NULL handling; Aggregate functions: MIN, MAX, AVG, SUM, COUNT; math, text and date functions; Joins: equi-join and natural join (Cartesian product of two tables)	20 marks

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