

CBSE Class 12 Informatics Practices (IP)

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

UNITS 5	THEORY MARKS 100	SESSION 2026-27
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Exam pattern. Total 100 marks: Theory paper 70 marks (Unit 1 Data Handling 25, Unit 2 SQL 25, Unit 3 Networks 10, Unit 4 Societal Impacts 10) + Practical 30 marks. Practical breakup: Pandas/Matplotlib programs 8, SQL queries 7, practical file 5, project work 5, viva-voce 5.

Practical. 30-mark practical comprising hands-on Pandas and Matplotlib programs (8), SQL queries (7), a practical file with at least 15 Pandas programs, 4 Matplotlib programs and 15 SQL queries (5), an individual or 2-3 member group IT project analyzing real-world data with Python libraries and charts (5), and a viva-voce (5).

#	UNIT AND TOPICS	MARKS
1	Unit 1: Data Handling using Pandas and Data Visualization Introduction to Python libraries: Pandas and Matplotlib; Data structures in Pandas: Series and Data Frames; Series: creation from ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; selection, indexing and slicing; Data Frames: creation from dictionary of Series, list of dictionaries, Text/CSV files; display; iteration; Operations on rows and columns: add, select, delete, rename; Head and Tail functions; Indexing using Labels and Boolean Indexing; Importing/Exporting data between CSV files and Data Frames; Data Visualization: purpose of plotting; drawing and saving line plot, bar graph and histogram using Matplotlib	25 marks
2	Unit 2: Database Query using SQL Revision of database concepts and SQL commands covered in Class XI; Math functions: POWER(), ROUND(), MOD(); Text/String functions: UCASE()/UPPER(), LCASE()/LOWER(), MID()/SUBSTRING()/SUBSTR(), LENGTH(), LEFT(), RIGHT(), INSTR(), LTRIM(), RTRIM(), TRIM(); Date functions: NOW(), DATE(), MONTH(), MONTHNAME(), YEAR(), DAY(), DAYNAME(); Aggregate functions: MAX(), MIN(), AVG(), SUM(), COUNT() and COUNT(*); Querying and manipulating data using GROUP BY, HAVING, ORDER BY; Working with two tables using equi-join	25 marks
3	Unit 3: Introduction to Computer Networks Introduction to networks; types of network: PAN, LAN, MAN, WAN; Network devices: modem, hub, switch, repeater, router, gateway; Network topologies: Star, Bus, Tree, Mesh; Introduction to Internet, URL, WWW and its applications: Web, email, Chat, VoIP; Website: introduction, difference between website and webpage, static vs dynamic web page, web server and hosting; Web browsers: commonly used browsers, browser settings, add-ons and plug-ins, cookies	10 marks

#	UNIT AND TOPICS	MARKS
4	Unit 4: Societal Impacts Digital footprint; net and communication etiquettes; Data protection; intellectual property rights (IPR); plagiarism; licensing and copyright; Free and open source software (FOSS); Cybercrime and cyber laws; hacking, phishing, cyber bullying; Overview of Indian IT Act; E-waste: hazards and management; Awareness about health concerns related to the usage of technology	10 marks
5	Practical & Project Programs using Pandas and Matplotlib (8 marks); SQL queries (7 marks); Practical file: minimum 15 Pandas programs, 4 Matplotlib programs and 15 SQL queries (5 marks); Project work using concepts from Class XI and XII (5 marks); Viva-voce (5 marks)	30 marks

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