

GURU HARKRISHAN PUBLIC SCHOOL
SYLLABUS
INFORMATICS PRACTICES(065), CLASS XII
SESSION 2022-23

Unit wise Distribution of Theory & Practical Marks with Periods

Unit No.	Unit Name	Marks	Periods Theory	Periods Practical	Total Periods
1	Data Handling using Pandas and Data Visualization	25	25	25	50
2	Database Query using SQL	25	20	17	37
3	Introduction to Computer Networks	10	12	-	12
4	Societal Impacts	10	14	-	14
	Project	-	-	7	7
	Practical	30	-	-	-
	Total	100	71	49	120

Month-wise Syllabus Bifurcation

Month	Chapter	Topics
April	Chapter-1: Data Handling using Pandas-1	Introduction to Python libraries- Pandas, Matplotlib. Data structures in Pandas - Series and Data Frames, Series: Creation of Series from – ndarray, dictionary, scalar value; mathematical operations; Head and Tail functions; Selection, Indexing and Slicing.
May	Chapter-1: Data Handling using Pandas-1 Continue	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, Boolean Indexing; Importing/Exporting Data between CSV files and Data Frames.
July	Chapter-3: Data Visualization using Pyplot	Purpose of plotting; drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram Customizing plots: adding label, title, and legend in plots.

	Quick Revision of Database concepts & SQL of XI class	<p>Introduction to database concepts and its need, Database Management System. Relational data model: Concept of domain, tuple, relation, candidate key, primary key, alternate key, Introduction of SQL, Advantages of using Structured Query Language, Data Definition Language, Data Query Language and Data Manipulation Language, Introduction to MySQL, creating a database using MySQL, Data Types</p> <p>Data Definition: CREATE TABLE Data Query: SELECT, FROM, WHERE. Data Manipulation: INSERT, UPDATE, DELETE,</p> <p>Project work start</p>
August	Chapter-4: Database Query & SQL	<p>Math functions: POWER (), ROUND (), MOD (). Text functions: UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (), INSTR (), LTRIM (), RTRIM (), TRIM (). Date Functions: NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().</p>
September	Chapter-4: Database Query & SQL Continue	<p>Aggregate Functions: MAX (), MIN (), AVG (), SUM (), COUNT (); using COUNT (*). Querying and manipulating data using Group by, Having, Order by.</p>
	<p align="center">Revision of Half Yearly Examination Syllabus</p> <p align="center">Half Yearly Practical Examination</p> <p align="center">Half Yearly Theory Examination</p>	
October	Chapter-5: Computer Networks	<p>Introduction to networks, Types of network: 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 a website and webpage, static vs dynamic web page, web server and hosting of a website. Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.</p>
November	Chapter-6: Societal Impacts	<p>Digital footprint, net and communication etiquettes, data protection, intellectual property rights (IPR), plagiarism, licensing and copyright, free and open source software</p>

		(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.
	Revision of Pre-Board Examination Completion of syllabus by 15.11.2022	
December/January	Pre-Board Examination Submission of Project/Practical files	
February	Revision & AISSEE Practical Examination	

Syllabus Bifurcation for Unit Test, Half Yearly Exam & Pre-Board Exam.

S. No.	Test	Chapters
1.	Unit Test-1 (25 Marks)	Chapter-1: Data Handling using Pandas-1
2.	Unit Test-2 (25 Marks)	Chapter-3: Data Visualization using Pyplot and SQL of XI class
3.	Half Yearly (Theory = 70 Marks)	Syllabus of Unit Test-1 & Unit Test-2 Chapter-4: Database Query & SQL
4.	Pre-Board (70 Marks)	Entire Syllabus

Practical Marks Distribution

S. No.	Unit Name	Marks
1.	Programs using Pandas and Matplotlib	8
2.	SQL Queries	7
3.	Practical File (minimum of 15 Python Programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included)	5
4.	Project Work (using concepts learned in class XI and XII)	5
5.	Viva Voice	5
	Total	30

Note: i) Chapter Numbers are referenced according to book "**Informatics Practices with Python by Preeti Arora**".

ii) Chapter No.2(Data Handling using Pandas-II) of this book is deleted chapters for the session 2022-23.

iii) NCERT book also recommended as a reference book.

iv) For more details of syllabus please visit following CBSE Link:

[Informatics Practices SrSec 2022-23.pdf \(cbseacademic.nic.in\)](https://cbseacademic.nic.in/Informatics_Practices_SrSec_2022-23.pdf)