



**DELHI PUBLIC SCHOOL (JOKA) SOUTH KOLKATA**  
**SYLLABUS - 2020-2021**  
**CLASS XII**  
**INFORMATICS PRACTICES**

<b>PERIODIC TEST-I</b>	<p><b>Unit1:Data Handling using Pandas and Data Visualization</b></p> <ul style="list-style-type: none"> <li>• Introduction to Python libraries- Pandas, Matplotlib.</li> <li>• Data structures in Pandas - Series and Data Frames.</li> <li>• Series: Creation of Series from – ndarray, dictionary, scalar value;</li> <li>• Mathematical operations; Head, Tail functions; Selection, Indexing, Slicing.</li> <li>• Data Frames: creation - from dictionary of Series, list of dictionaries, Text/CSV files;</li> <li>• Display; iteration; operations on rows and columns:</li> <li>• Add, select, delete, rename; Head and Tail functions;</li> <li>• Indexing using Labels, Boolean Indexing;</li> <li>• Importing/Exporting Data between CSV files and Data Frames.</li> <li>• Data Visualization Purpose of plotting</li> <li>• Drawing and saving following types of plots using Matplotlib – line plot, bar graph, histogram</li> <li>• Customizing plots: adding label, title, and legend in plots.</li> </ul>																		
<b>MIDTERM EXAMINATION</b>	<p><b>Theory:</b></p> <ul style="list-style-type: none"> <li>• <b>Unit 1: Data Handling using Pandas and Data Visualization(Revision)</b></li> <li>• <b>Unit 2: Database Query using SQL</b>  <b>Math functions:</b>POWER (), ROUND (), MOD ().  <b>Text functions:</b>UCASE ()/UPPER (), LCASE ()/LOWER (), MID ()/ SUBSTRING ()/SUBSTR (), LENGTH (), LEFT (), RIGHT (),INSTR (), LTRIM (), RTRIM (), TRIM ().  <b>Date Functions:</b>NOW (), DATE (), MONTH (), MONTHNAME (), YEAR (), DAY (), DAYNAME ().  <b>Aggregate Functions:</b>MAX (), MIN (), AVG (), SUM (), COUNT (); COUNT (*).  </li> <li>• <b>Querying and manipulating data using</b>Group by, Having, Order by.</li> </ul> <p><b>Practical:</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">S.No.</th> <th style="width: 70%;">Unit Name</th> <th style="width: 20%;">Marks</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Programs using Pandas and Matplotlib</td> <td style="text-align: center;">08</td> </tr> <tr> <td style="text-align: center;">2</td> <td>SQL Queries</td> <td style="text-align: center;">07</td> </tr> <tr> <td style="text-align: center;">3</td> <td>Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included)</td> <td style="text-align: center;">10</td> </tr> <tr> <td style="text-align: center;">4</td> <td>Viva-Voce</td> <td style="text-align: center;">05</td> </tr> <tr> <td></td> <td><b>TOTAL</b></td> <td style="text-align: center;"><b>30</b></td> </tr> </tbody> </table>	S.No.	Unit Name	Marks	1	Programs using Pandas and Matplotlib	08	2	SQL Queries	07	3	Practical file (minimum of 15 programs based on Pandas, 4 based on Matplotlib and 15 SQL queries must be included)	10	4	Viva-Voce	05		<b>TOTAL</b>	<b>30</b>
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<b>PERIODIC TEST-II</b>	<p><b>Unit3:Introduction to Computer Networks</b></p> <ul style="list-style-type: none"> <li>• Introduction to networks, Types of network: LAN, MAN, WAN.</li> <li>• Network Devices: modem, hub, switch, repeater, router, gateway</li> <li>• Network Topologies: Star, Bus, Tree, Mesh.</li> <li>• Introduction to Internet, URL, WWW, and its applications- Web, email, Chat, VoIP.</li> <li>• Website: Introduction, difference between a website and webpage, static vs dynamic web page, web server and hosting of a website.</li> <li>• Web Browsers: Introduction, commonly used browsers, browser settings, add-ons and plug-ins, cookies.</li> </ul> <p><b>Unit4:Societal Impacts</b></p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• E-waste: hazards and management.</li> <li>• Awareness about health concerns related to the usage of technology.</li> </ul>
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**\*\* IN CBSE CLASS - XII EXAMINATION THE ENTIRE YEAR'S SYLLABUS WILL BE ASSESSED.**

**N.B. :DEDUCTED PORTION (as per CBSE guidelines):**

- **Data handling using Pandas – II:** Descriptive Statistics, Data Frame operations: Aggregation, group by, Sorting, pivoting, renaming index, handling missing values–dropping and filling. Importing/Exporting Data between MySQL database and Pandas.
- **Data Visualization:** pie chart, frequency polygon, box plot and scatter plot. color, style (dashed, dotted), width
- **DBMS :** Joining, Merging and Concatenation and respective database Query using SQL