

**DEDUCTED PORTION**  
**Informatics Practices - 065**  
**Class XI**

| Topics   |
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| <p>Unit 3: Data Handling using NumPy</p> <p>Data and its purpose, importance of data, structured and unstructured data, data processing cycle, basic statistical methods for understanding data - mean, median, mode, standard deviation and variance.</p> <p>Introduction to NumPy library, NumPy arrays and their advantage, creation of NumPy arrays; indexing, slicing, and iteration; concatenating and splitting array</p> <p>Arithmetic operations on one Dimensional and two Dimensional arrays.</p> <p>Calculating max, min, count, sum, mean, median, mode, standard deviation, variance on NumPy arrays.</p>  |
| <p>Unit 4: Database concepts and the Structured Query Language</p> <p>, foreign key.</p> <p>DROP TABLE, ALTER TABLE.</p> <p>, UPDATE, DELETE</p>   |
| <p>5.2 Numpy Program</p> <p>To create an array of 1D containing numeric values 0 to 9.</p> <p>To create a NumPy array with all values as 0.</p> <p>To extract values at odd numbered position from a NumPy array.</p> <p>To create a 1-D array having 12 elements using arange(). Now, convert this array into a 2-D array with size 4X3.</p> <p>To perform basic arithmetic operations on 1D and 2D array .</p> <p>5.3 Data Management: SQL Commands</p> <p>To delete the details of a student in the above table.</p> <p>To increase marks by 5% for those students who have Rno more than 20.</p> <p>To add a new column email in the above table with appropriate data type.</p> <p>To add the email ids of each student in the previously created email column.</p> |

## CLASS XII

| Topics   |
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| <p>Unit-1 Data handling using Pandas – II</p> <p>Descriptive Statistics: max, min, count, sum, mean, median, mode, quartile, Standard deviation, variance.</p> <p>Data Frame operations: Aggregation, group by, Sorting, Deleting and Renaming Index, Pivoting.</p> <p>Handling missing values – dropping and filling.</p> <p>Importing/Exporting Data between MySQL database and Pandas.</p> <p>Data Visualization</p> <p>, pie chart, frequency polygon, box plot and scatter plot.</p> <p>: color, style (dashed, dotted), width;</p>   |
| <p>4. Unit Wise syllabus</p> <p>; Joining, Merging and Concatenation.</p> <p>Unit 2: Database Query using SQL</p>  |
| <p><b>Practical</b></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Create a data frame based on ecommerce data and generate descriptive statistics (mean, median, mode, quartile, and variance)</li><li><input type="checkbox"/> Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions</li><li><input type="checkbox"/> Filter out rows based on different criteria such as duplicate rows.</li><li><input type="checkbox"/> Find the sum of each column, or find the column with the lowest mean.</li><li><input type="checkbox"/> Locate the 3 largest values in a data frame.</li><li><input type="checkbox"/> Subtract the mean of a row from each element of the row in a Data Frame.</li><li><input type="checkbox"/> Replace all negative values in a data frame with a 0.</li><li><input type="checkbox"/> Replace all missing values in a data frame with a 999.</li><li><input type="checkbox"/> Importing and exporting data between pandas and CSV file</li><li><input type="checkbox"/> Importing and exporting data between pandas and MySQL database</li><li><input type="checkbox"/> 5.3 Data Management</li><li><input type="checkbox"/> Create a new table (order ID, customer Name, and order Date) by joining two tables (orderID, customer ID, and order Date) and (customer ID, customer Name, contact Name, country).</li><li><input type="checkbox"/> Create a foreign key in one of the two tables mentioned above</li><li><input type="checkbox"/> Create a new table (name, date of birth) by joining two tables (student id, name) and (student id, date of birth).</li></ul> <p>5.4 Introduction to Computer Networks</p> <ul style="list-style-type: none"><li><input type="checkbox"/> Download, install and configure browser.</li></ul> |

