6. Distribution of Practical Marks

Sl.No.	Unit Name	Marks
1	Programs using Pandas and Matplotlib	8
2	SQL Queries	5
3	Practical file (minimum of 20 programs based on Pandas , 5 based on Matplotlib and 20 SQL queries must be included)	5
4	Project Work (using concepts learned in class XI and XII)	7
5	Viva-Voce	5
	TOTAL	30

7. Suggested Practical List

7.1 Data Handling

1. Create a pandas series from a dictionary of values and an ndarray
2. Given a Series, print all the elements that are above the 75th percentile.
3. Create a Data Frame quarterly sales where each row contains the item category, item name, and expenditure. Group the rows by the category, and print the total expenditure per category.
4. Create a data frame based on ecommerce data and generate descriptive statistics (mean, median, mode, quartile, and variance)
5. Create a data frame for examination result and display row labels, column labels data types of each column and the dimensions
6. Filter out rows based on different criteria such as duplicate rows..
7. Find the sum of each column, or find the column with the lowest mean.
8. Locate the 3 largest values in a data frame.
9. Subtract the mean of a row from each element of the row in a Data Frame.
10. Replace all negative values in a data frame with a 0.
11. Replace all missing values in a data frame with a 999.
12. Importing and exporting data between pandas and CSV file
13. Importing and exporting data between pandas and MySQL database

7.2 Visualization

14. Given the school result data, analyse the performance of the students on different parameters, e.g subject wise or class wise.
15. For the Data frames created above, analyze and plot appropriate charts with title and legend.
16. Take data of your interest from an open source (e.g. data.gov.in), aggregate and summarize it. Then plot it using different plotting functions of the Matplotlib library.

7.3 Data Management

17. Create a student table with the student id, name, and marks as attributes where the student id is the primary key.
18. Insert the details of a new student in the above table.
19. Delete the details of a particular student in the above table.
20. Use the select command to get the details of the students with marks more than 80.
21. Create a new table (order ID, customer Name, and order Date) by joining two tables (order ID, customer ID, and order Date) and (customer ID, customer Name, contact Name, country).
22. Create a foreign key in one of the two tables mentioned above
23. Find the min, max, sum, and average of the marks in a student marks table.
24. Find the total number of customers from each country in the table (customer ID, customer Name, country) using group by.
25. Create a new table (name, date of birth) by joining two tables (student id, name) and (student id, date of birth).
26. Write a SQL query to order the (student ID, marks) table in descending order of the marks.

7.4 Introduction to Computer Networks

27. Download, install and configure browser.

Reference:

NCERT Informatics Practices - Text book for class - XII