Q No.	Section-E (3 x 5 = 15 Marks)	Marks
36	Consider the DataFrame *df* shown below.	

	MovieID	Title	Year	Rating
0	1	LAGAAN	2001	8.4
1	2	TAARE ZAMEEN PAR	2007	8.5
2	3	3 IDIOTS	2009	8.4
3	4	DANGAL	2016	8.4
4	5	ANDHADHUN	2018	8.3

Write Python statements for the DataFrame **`df`** to:

I. Print the first two rows of the DataFrame **`df.`**

II. Display titles of all the movies.

III. Remove the column rating.

IV. Display the data of the **`'Title'`** column from indexes 2 to 4 (both included)

V. Rename the column name **`'Title'`** to **`'Name'`**.

I. print(df.head(2))

II. print(df['Title'])

III. df = df.drop('Rating', axis=1)

IV. print(df.loc[2:4,'Title'])

V. df.rename(columns={'Title':'Name'}, inplace=True)

Write suitable SQL query for the following:

I. To display the average score from the **`test_results`** column (attribute) in the **`Exams`** table

II. To display the last three characters of the **`registration_number`** column (attribute) in the **`Vehicles`** table. (Note: The registration numbers are stored in the format DL-01-AV-1234)

III. To display the data from the column (attribute) **`username`** in the **`Users`** table, after eliminating any leading and trailing spaces.

IV. To display the maximum value in the **`salary`** column (attribute) of the **`Employees`** table.

V. To determine the count of rows in the **`Suppliers`** table.

I. SELECT AVG(test_results) FROM Exams;
II. SELECT RIGHT(registration_number, 3) FROM Vehicles;
III. SELECT TRIM(username) FROM Users;
IV. SELECT MAX(salary) FROM Employees;
V. SELECT COUNT(*) FROM Suppliers;

OR

Write suitable SQL query for the following:

Round the value of pi (3.14159) to two decimal places.

Calculate the remainder when 125 is divided by 8.

Display the number of characters in the word 'NewDelhi'.

Display the first 5 characters from the word 'Informatics Practices'.

Display details from `'email'` column (attribute), in the `'Students'` table, after removing any leading and trailing spaces.

I. SELECT ROUND(3.14159, 2);
II. SELECT MOD(125, 8);
III. SELECT LENGTH('NewDelhi');
IV. SELECT LEFT('Informatics Practices', 5);
V. SELECT TRIM(email) FROM Students;

ABC Pvt. Ltd., a multinational technology company, is looking to establish its Indian Head Office in Bengaluru, and a regional office branch in Lucknow. The Bengaluru head office will be organized into four departments: HR, FINANCE, TECHNICAL, AND SUPPORT. As a network engineer, you have to propose solutions for various queries listed from I to V.

The shortest distances between the departments/offices are as follows:

HR TO FINANCE	65 M
HR TO TECHNICAL	80 M
HR TO SUPPORT	70 M
FINANCE TO TECHNICAL	60 M
FINANCE TO SUPPORT	75 M
TECHNICAL TO SUPPORT	50 M
BENGALURU OFFICE TO LUCKNOW	1900 KM

The number of computers in each department/office is as follows:

HR	175
FINANCE	35
TECHNICAL	50
SUPPORT	15
LUCKNOW OFFICE	40

I. Suggest the most suitable department in the Bengaluru Office Setup, to install the server. Also, give a reason to justify your suggested location.

II. Draw a suitable cable layout of wired network connectivity between the departments in the Bengaluru Office.

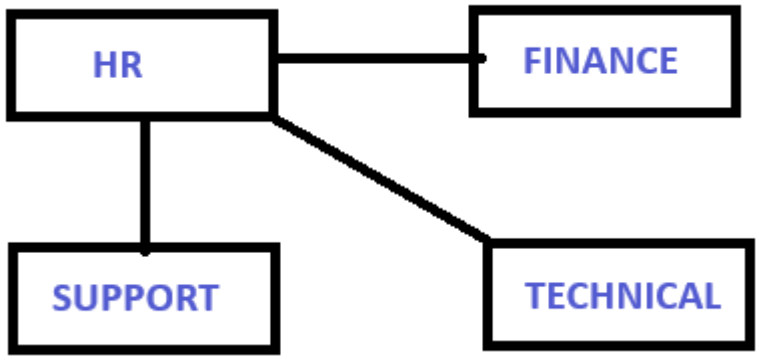
III. Which networking device would you suggest the company to purchase to interconnect all the computers within a department in Bengaluru Office?

IV. The company is considering establishing a network connection between its Bengaluru Head Office and Lucknow regional office. Which type of network—LAN, MAN, or WAN—will be created? Justify your answer.

V. The company plans to develop an interactive website that will enable its employees to monitor their performance after login. Would you recommend a static or dynamic website, and why?

I. The server should be installed in the HR department as it has the most number of computers.

II. Star topology



III. Switch/Hub

IV. WAN will be created as the offices are located in different cities.

V. A dynamic website is recommended as it can display the dynamic performance data (which differs from employee to employee) of each employee.