

PART-A (SECTION-I)

(Attempt any 15 questions from questions 1 to 21)

1. _____ function applies the passed function on each individual data element of the dataframe. 1
 1. apply()
 2. applymap()
 3. pivot()
 4. None

2. The command used to give a title along X-Axis to a graph is _____. 1
 1. LabelX()
 2. xtitle()
 3. xlabel()
 4. label()

3. By default, ORDER BY clause lists the records in _____ order. 1
 1. Ascending
 2. Descending
 3. Both (1 and 2)
 4. None

4. Write the output: SELECT CHAR(70, 65, 67, 69); 1
 1. ASLL
 2. FACE
 3. ACEF
 4. CEAF

5. SQL applies condition on groups through _____ command. 1
 1. Group by
 2. Select
 3. Where
 4. Having

6. Given a Pandas Series **SQ**, the command which will display the first 4 rows is _____. 1
 1. print(SQ.head(4))
 2. print(SQ.heads(4))
 3. print(SQ.Head(4))
 4. print(head(4))

7. What is output of the following: 1

```
x=np.array([1,2,3])  
y=np.array([3,2,1])  
z=np.concatenate([x,y])  
print(z)
```

 1. [(1,2,3),(3,2,1)]
 2. [1,2,3,3,2,1]
 3. [1,2,3,2,1]
 4. [1,1,2,2,3,3]

8. Which is not an example of topology? 1
 1. Tree
 2. Star
 3. Bus
 4. Branch

9. The _____ function is used to draw Horizontal bar Chart. 1
 1. bar_Chart()
 2. barh()
 3. b_Chart()
 4. None

10. Which amongst the following is not an example of Network device? 1
 1. HUB
 2. MESH
 3. Router
 4. Switch

11. Commit, Rollback and Savepoint are the example of _____ Statement. 1
 1. DDL
 2. DML
 3. DCL
 4. TCL

12. The python statement to delete the 3rd and 5th rows from a dataframe **df** is ? 1
 1. df.drop([2,4])
 2. df.droprows([2,4])
 3. df.delete([2,4])
 4. df.rows_del([2,4])

13. Which function is used to generate quartile in python pandas? 1
 1. quartile()
 2. Both
 3. quantile()
 4. None of the above

14. Which is not an example of DDL statements? 1

- | | | | | |
|-----------|---------|----------|-----------|--|
| 1. CREATE | 2. DROP | 3. ALTER | 4. UPDATE | |
|-----------|---------|----------|-----------|--|
15. When we perform basic iterations in Series, the result it produces is? 1
- | | | | |
|-----------|------------------|----------------|----------|
| 1. Values | 2. Column Labels | 3. Item Labels | 4. Index |
|-----------|------------------|----------------|----------|
16. Which operator is used to slice the rows in DataFrame? 1
- | | | | |
|------|------|------|------|
| 1. - | 2. = | 3. * | 4. : |
|------|------|------|------|
17. Adding a new column using the existing columns in DataFrame the command is? 1
- | | |
|-------------------------------------|----------------|
| 1. df['four']=df['one']+df['three'] | 3. df=df.new() |
| 2. new.DF() | 4. df[] |
18. The attribute used to jump rows in **csv** file while reading the data, is? 1
- | | | | |
|---------|---------|---------|-------------|
| 1. Jump | 2. Skip | 3. Goto | 4. Skiprows |
|---------|---------|---------|-------------|
19. Stealing someone else intellectual work and representing it as your own is known as? 1
- | | | | |
|-----------|---------------|---------|-----------|
| 1. Piracy | 2. Plagiarism | 3. Scam | 4. Coping |
|-----------|---------------|---------|-----------|
20. Which amongst the following is not an example of unguided media? 1
1. Fiber Optic Cable
 2. Microwave
 3. Radio Frequency
 4. Satellite
21. MySQL uses the port number_____ to start. 1
- | | | | |
|---------|---------|---------|---------|
| 1. 1007 | 2. 1402 | 3. 3306 | 4. 2403 |
|---------|---------|---------|---------|

SECTION – II

Both the case study based questions (22 and 23) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark.

22. Choose appropriate answer with respect to the following code snippet.

(Attempt Any Four sub parts)

```
CREATE TABLE student (
    name CHAR(30),
    student_id INT,
    gender CHAR(1),
    PRIMARY KEY (student_id)
);
```

1. What will be the degree of the table **student**? 1

a. 2	b. 3	c. 4	d. 5
------	------	------	------

2. What does the 'name' represent in the above code snippet? 1

a. A Table	c. A Row
b. A Column	d. A Database

3. State the SQL command that will give the output as: 1
 - a. Displays contents of table 'student'
 - b. Displays column names and contents of table Student
 - c. Result in Error
 - d. Displays only column names of the table student

4. What will be the output of following query? 1

```
INSERT INTO student
VALUES ("Suhana",109,'F'),
VALUES ("Rivaan",102,'M'),
VALUES ("Atharv",103,'M'),
VALUES ("Rishika",105,'F'),
VALUES ("Garvit",104,'M'),
VALUES ("Shaurya",109,'M');
```

- a. Error
- b. No Error
- c. Depends on Compiler
- d. Successful compilation of query

5. In the following query, how many rows will be deleted? 1

DELETE STUDENT WHERE STUDENT_ID=109;

- a. One Row
- b. All the row where student ID equal to 109
- c. No row will be deleted
- d. Two Rows

23. Consider the following data (**Attempt Any Four sub parts**):

Roll_No	Name	Age	Marks
1	Arun	18	68
2	Mohit	14	47
3	Karan	13	78
4	Lalit	16	87
5	Ravi	14	60

- 1. Display the details of the student who scored highest marks. 1
- 2. Display the sum of all the marks. 1
- 3. Display the average marks. 1
- 4. Display the detail of the student whose Roll_No is 2. 1
- 5. The command use to print the dataframe. 1

PART-B (Section – I)

24. Write python statements to create a data frame for the following data. 2

Name	Age	Designation
RAJIV	20	CLERK
SAMEER	35	MANAGER
KAPIL	45	ACCOUNTANT

25. State any two differences between update and alter statement of SQL. 2

OR

What are the differences between Database and DBMS?

26. Consider the String st with value "STRING". Write the output of the following SQL commands : 2
1. SELECT SUBSTR("STRING",2,4);
 2. SELECT LEFT("STRING",3);

27. Consider the following Series object "Item_Details". 2

Pen	500
Pencil	234
Sharpener	155
Scale	123
Eraser	345

- a. Write the command which will display the items which are having qty less than 200.
- b. Write the command to rename the series as "Items_Cost".

28. Rithika write the commands with respect to a table "LIBRARY" having fields as: 2

BK_ID, BK_NAME, BK_Author, BK_Qty

Command 1: SELECT count(*) from LIBRARY;

Command 2: SELECT count(BK_Qty) from LIBRARY;

She gets the output 10 for the command1 but gets the output 9 for the command2.

Explain the output with justification.

29. Consider the following SQL string "ROCK PAPER SCISSORS". 2

Write the commands to display:

1. First four letters from left side of the string
2. Last 4 letters from right side of the string

OR

- a. To find the position of PAPER in the string
- b. To find the total number of characters in the string.

30. Consider the following dataframe, "TESTING". 2

	Name	Eng	IP	Maths
0	P	67	99	98
1	R	76	99	99
2	A	75	98	97
3	J	88	97	98
4	B	92	98	90

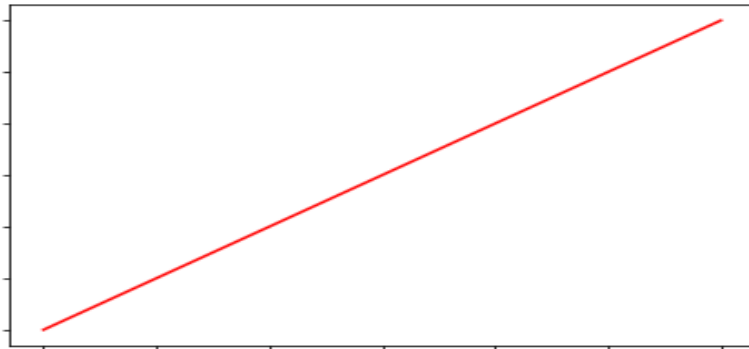
Write the commands for the followings:

- a. To add the marks of Phy as [91,90,92,93,91]
- b. To find the sum of Eng, IP, Maths and Phy marks and assign the total marks with heading Total.

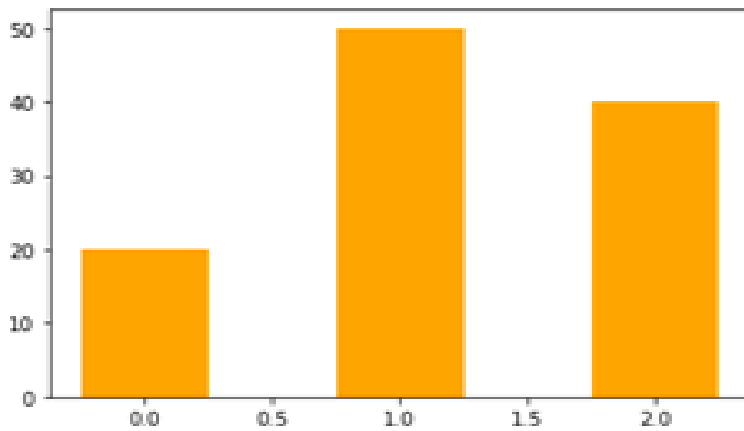
31. Expand the following terms with respect to Database. 2
 1. RDBMS b. SQL c. DML d. DCL
32. List any two advantages of Structures Query Language. 2
33. Define the followings: Primary Key, DBMS 2

Section-II

34. What do you understand by constraints? Explain in brief any two constraints. 3
35. Write the python code to Plot the following Graph. 3



OR



36. Consider the following table and answer the questions given below: 3

AdmNo	Name	Class	Section	Average
101	Anu	12	A	88
102	Bala	12	B	78
103	Madhu	11	A	86
104	Rithika	11	P	99

105	Rakesh	11	P	99
106	Surjeet	10	D	77
107	Rakhi	10	D	74
108	Mohan	9	C	65
109	Krishna	8	A	67

- What will be the Degree and Cardinality of the table STUDENT?
- Write a SQL command to update the average marks of AdmNo-108, from 65 to 70.

37. WAP to plot a Quadratic equation using dashed Line Chart

3

$$1 - 0.5 * x^{**2}$$

OR

WAP in python to create a series using Dictionary.

Section –III

38. Given the dataset for Employee:

Name	Age	Designation
Rajiv	28	Accountant
Sameer	34	Cashier
Ramesh	33	Clerk
Naveen	42	IT Manager
Mohit	32	Store Manager

Write a program in the python to do the followings:

- Create the dataframe EMP 2
- Find and display the max and min age from the dataframe Emp 2
- Display the DataFrame. 1

Student Project Database				
Table: STUDENT				
Roll No	Name	Class	Section	Registration_ID
11	Mohan	XI	1	IP-101-15
12	Sohan	XI	2	IP-104-15
21	John	XII	1	CS-103-14
22	Meena	XII	2	CS-101-14
23	Juhi	XII	2	CS-101-10
Table: PROJECT				
ProjectNo	PName	SubmissionDate		
101	Airline Database	12/01/2018		
102	Library Database	12/01/2018		
103	Employee Database	15/01/2018		
104	Student Database	12/01/2018		
105	Inventory Database	15/01/2018		
106	Railway Database	15/01/2018		
Table: PROJECT ASSIGNED				
Registration_ID	ProjectNo			
IP-101-15	101			
IP-104-15	103			
CS-103-14	102			
CS-101-14	105			
CS-101-10	104			

For the above given database STUDENT-PROJECT, answer the following:

- Name primary key of each table.
- Find foreign key(s) in table PROJECT-ASSIGNED.
- Is there any alternate key in table STUDENT? Give justification for your answer.
- Can a user assign duplicate value to the field RollNo of STUDENT table? Justify.
- Insert a project detail without submission-date.

OR

Consider the following Table : "LOANS"

AccNo	Cust_Name	Loan_Amt	Installments	Int_rate	Start_date	Interest
1	R. K. Gupta	300000	36	12.00	19-07-2009	1200
2	S. P. Sharma	500000	48	10.00	22-03-2008	1800
3	K.P. Jain	300000	36	NULL	08-03-2007	1600
4	M. P. Yadav	800000	60	10.00	06-12-2007	2250
5	S. P. Sinha	200000	36	12.50	03-01-2010	4500
6	P. Sharma	700000	60	12.50	05-06-2008	3500
7	K. S. Dhall	500000	48	NULL	05-03-2008	3800

Answer the following Questions:

- Display the sum of all Loan Amount whose Interest rate is greater than 10.
- Display the maximum interest from Loans table.
- Display the count of all Loan holders whose name ends with 'sharma'.
- Display the interest-wise count of all loan holders whose installments due is more than 5 in each group.
- Display the count of all Loan holders whose interest is NULL.

1. Write any three features of Python Pandas.
2. What are the Data Structures available in Pandas?
3. Name the constructor which is used to create the Pandas dataframe.
4. What do you understand by Data Visualization?
5. Which module is used in python for drawing charts?

OR

- a. Write any two differences between single row function and aggregate function used in SQL.
- b. Name the types of data models available in DBMS.
- c. Which command is used to show the structure of the table in SQL?
- d. Give example of different types of statement used in SQL.
- e. The default user which is used to Login in the MySQL is _____.
