

TOPIC – SIMPLE QUERIES IN SQL

S.No **Questions with Answers** **Marks**

1 Write a function in SQL to find minimum and maximum value of a column in a table. 1

Sol MIN () and MAX () aggregate functions in SQL.

2 Which of the following is used to arrange data of table? 1

- a. ARRANGE BY
- b. ORDER BY
- c. ASC
- d. DESC

Sol b. ORDER BY

3 In MYSQL, write the query to display list of databases store in it. 1

Sol SHOW DATABASES;

4 Consider the following query: 1

SELECT emp_name from Employee WHERE dept_id _____ NULL;

- a. =
- b. LIKE
- c. IS
- d. ==

Sol c. IS

5 For the given table **CLUB** 1

Table: CLUB

COACH H_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY
1	KUKREJA	35	KARATE	27/03/1996	10000
2	RAVINA	34	KARATE	20/01/1997	12000
3	KARAN	34	SQUASH	19/02/1998	20000
4	TARUN	33	BASKETBALL	01/01/1998	15000
5	ZUBIN	36	SWIMMING	12/01/1998	7500
6	KETAKI	36	SWIMMING	24/02/1998	8000
7	ANKITA	39	SQUASH	20/02/1998	22000
8	ZAREEN	37	KARATE	22/02/1998	11000
9	KUSH	41	SWIMMING	13/01/1998	9000
10	SHAILYA	37	BASKETBALL	19/02/1998	17000

What will be the degree and cardinality of table?

Sol Degree is Number of attributes or columns which will be 7

Cardinality is Number of tuples or rows in a table which will be 10.

6 Which of the following is not a valid clause in SQL? 1

- a. MIN
- b. WHERE
- c. BETWEEN
- d. GROUP BY

Sol a. MIN is a function in SQL (not a clause like rest of the options)

7 Which command is used to add new row in a table? **1**

- a. Add
- b. Insert
- c. Update
- d. None of the above

Sol b. Insert command is used to add new row in a table

8 What is the full of SQL? **1**

Sol Structured Query Language

9 What is the difference between CHAR and VARCHAR datatypes in SQL? **2**

Sol

- CHAR data type is used to store fixed-length string data and the VARCHAR data type is used to store variable-length string data.
- The storage size of the CHAR data type will always be the maximum length of this data type and the storage size of VARCHAR will be the length of the inserted string data. Hence, it is better to use the CHAR data type when the length of the string will be the same length for all the records.
- CHAR is used to store small data whereas VARCHAR is used to store large data.
- CHAR works faster and VARCHAR works slower.

10 Consider the following table Student and give output of following questions:

Table: Student

RollNo	Name	Subject	Marks	Grade
1001	Ram	English	78	B
1002	Shyam	Hindi	89	A
1003	Karan	SST	67	C
1004	Rajan	Science	98	A+
1005	Shaan	Computer	81	B

a SELECT * FROM Student WHERE Grade = 'B' ; **1**

b SELECT MAX(Marks) FROM Student; **1**

c SELECT Name, Marks FROM Student WHERE Subject IN ('English', 'Science'); **1**

d SELECT RollNo, Subject FROM Student WHERE Marks >= 85; **1**

Sol a

RollNo	Name	Subject	Marks	Grade
1001	Ram	English	78	B
1005	Shaan	Computer	81	B

b

MAX(Marks)
98

c

Name	Marks
Ram	78
Rajan	98

d

RollNo	Subject
1002	Hindi
1004	Science

11 Write SQL commands for the following on the basis of given table **WORKER**

Table: Worker

Worker_ID	First_Name	Last_Name	Salary	Joining_Date	Department
001	Monika	Arora	100000	2014-02-20	HR
002	Niharika	Verman	80000	2014-06-11	Admin
003	Vishal	Singhal	300000	2014-02-20	HR
004	Amitabh	Singh	500000	2014-02-20	Admin
005	Vivek	Bhati	500000	2014-06-11	Admin
006	Vipul	Diwan	200000	2014-06-11	Account
007	Satish	Kumar	75000	2014-01-20	Account
008	Geetika	Chauhan	90000	2014-04-11	Admin

- a To display first and last name of workers having salary greater than or equal to 90000. **1**
- b To display details of workers working in HR department and Admin department **1**
- c To find average of Salary in table worker **1**
- d To Change first name of worker to 'Satisha' whose worker id is 007 **1**

Sol a SELECT First_Name, Last_Name FROM Worker WHERE Salary >=90000;

b SELECT * FROM Worker WHERE Department IN ('HR', 'Admin');

c SELECT AVG(Salary) FROM worker;

d UPDATE Worker SET First_Name='Satisha' WHERE Worker_Id=007;

Question Bank: SQL Basics (DDL and DML Commands)

PART A , Section I

1 Which of the following is a DDL command?

- a) SELECT b) ALTER c) INSERT d) UPDATE

Ans. b) ALTER

2 What is the minimum number of column required in MySQL to create table?

Ans. ONE (1)

3 The _____ command can be used to makes changes in the rows of a table in SQL.

Ans.

4 Which command is used to add new column in existing table?

Ans. ALTER TABLE

5 Which command is used to remove the table from database?

Ans. DROP TABLE

6 Which command is used to add new record in table?

Ans. INSERT INTO

7 In SQL, name the clause that is used to display the tuples in ascending order of an attribute

Ans. ORDER BY

8 In SQL, what is the use of IS NULL operator?

Ans. IS NULL used to compare NULL values present in any column

9 Which of the following types of table constraints will prevent the entry of duplicate rows? a)Unique b)Distinct c)Primary Key d)NULL

Ans. c) Primary Key

10 Which is the subset of SQL commands used to manipulate database structures, including tables?

a.None of these

b.Both Data Definition Language (DDL) and Data Manipulation Language (DML)

c.Data Definition Language (DDL)

d.Data Manipulation Language (DML)

Ans. c.Data Definition Language (DDL)

PART A , Section II

1 Consider the table STUDENT given below:

RollNo	Name	Class	DOB	Gender	City	Marks
1	Anand	XI	6/6/97	M	Agra	430
2	Chetan	XII	7/5/94	M	Mumbai	460
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492
5	Saniyal	XII	8/10/95	M	Delhi	360
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Moscow	324
8	Nishant	X	12/6/95	M	Moscow	429

a. State the command that will give the output as :

Name
Anand
Chetan
Geet
Preeti

i. select name from student where class='XI' and class='XII';

ii. select name from student where not class='XI' and class='XII';

iii. select name from student where city="Agra" OR city="Mumbai";

iv. select name from student where city IN("Agra", "Mumbai");

Choose the correct option:

a. Both (i) and (ii).

- b. Both (iii) and (iv).
- c. Any of the options (i), (ii) and (iv)
- d. Only (iii)

Ans. b. Both (iii) and (iv).

b What will be the output of the following command?
 Select * from student where gender = "F" order by marks;

(i)

Rollno	Name	Class	DOB	Gender	City	Marks
4	Preeti	XII	8/8/95	F	Mumbai	492
3	Geet	XI	6/5/97	F	Agra	470
7	Neha	X	8/12/95	F	Moscow	324
6	Maakhiy	XI	12/12/94	F	Dubai	256

(ii)

Rollno	Name	Class	DOB	Gender	City	Marks
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Moscow	324
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492

(iii)

Gender	Marks
F	256
F	324
F	470
F	492

(iv)

Gender	Marks
F	492
F	470
F	324
F	256

(i)

Rollno	Name	Class	DOB	Gender	City	Marks
4	Preeti	XII	8/8/95	F	Mumbai	492
3	Geet	XI	6/5/97	F	Agra	470
7	Neha	X	8/12/95	F	Moscow	324
6	Maakhiy	XI	12/12/94	F	Dubai	256

c Prachi has given the following command to obtain the highest marks Select max(marks)

from student where group by class;

but she is not getting the desired result. Help her by writing the correct command.

a. Select max(marks) from student where group by class;

b. Select class, max(marks) from student group by marks;

c. Select class, max(marks) group by class from student;

d. Select class, max(marks) from student group by class;

Ans. d. Select class, max(marks) from student group by class;

d State the command to display the average marks scored by students of each gender who are in class XI?

i. Select gender, avg(marks) from student where class= "XI" group by gender;

ii Select gender, avg(marks) from student group by gender where class="XI";

iii. Select gender, avg(marks) group by gender from student having class="XI";

iv. Select gender, avg(marks) from student group by gender having class = "XI";

Choose the correct option:

a. Both (ii) and (iii)

b. Both (ii) and (iv)

c. Both (i) and (iii)

d. Only (iv)

Ans. d. Only (iv)

e Help Ritesh to write the command to display the name of the youngest student?

a. select name,min(DOB) from student ;

b. select name,max(DOB) from student ;

c. select name,min(DOB) from student group by name ;

d. select name,maximum(DOB) from student;

Ans. c. select name,min(DOB) from student group by name ;

2 From the given table, Answer the following questions:

TableName=House

House_Name	House_Captain	House_Points
Red Rose	Yathin	243
Lotus	Hari Narayan	298
Blue Bells	Anil Sharma	220
Sun Flower	Felicita	260

a Write the degree and cardinality of the above table.

Ans. Degree=3 and cardinality=4

b Write the domain of House_Captain attribute.

Ans. Yathin, Hari Narayan, Anil Sharma, Felicita

c Write a Query to insert House_Name=Tulip, House_Captain= Rajesh and House_Point=278

Ans. Insert into House values ('Tulip','Rajesh',278)

d Any field of above table can be made Primary key

Ans. House_Points

e If we want to add a new column in above table which SQL command we use

Ans. Alter table House

Add <new column> <data type>;

PART B, Section I (2 marks)

1 Write the full forms of DDL and DML. Write any two commands of DML in SQL.

Ans. DDL: Data Definition Language, DML: Data Manipulation Language
DML Commands: SELECT, UPDATE

2 Mr. Mittal is using a table with following columns :

Name, Class, Streamed, Stream_name

He needs to display names of students who have not been assigned any stream or have been

assigned stream_name that ends with "computers

He wrote the following command, which did not give the desired result.

```
SELECT Name, Class FROM Students
```

```
WHERE Stream_name = NULL OR Stream_name = "%computers" ;
```

Help Mr. Mittal to run the query by removing the error and write correct query

Ans. SELECT Name, Class FROM Students

```
WHERE Stream_name IS NULL OR Stream_name = "%computers" ;
```

3 What is the use of wildcard?

LIKE is used with two wildcard characters:

a) % : used when we want to substitute multiple characters. With % length is not fixed

b) _ (underscore) : used when we want to substitute Single character

4 What do you understand by Degree and Cardinality of a table?

Ans. Degree: Number of attributes and Cardinality is number of tuples in a relation

PART B, Section II (3 marks)

1 A relation Vehicles is given below :

V_no	Type	Company	Price	Qty
AW125	Wagon	Maruti	250000	25
J0083	Jeep	Mahindra	4000000	15
S9090	SUV	Mitsubishi	2500000	18
M0892	Mini van	Datsun	1500000	26
W9760	SUV	Maruti	2500000	18
R2409	Mini van	Mahindra	350000	15

a Display the average price of each type of vehicle having quantity more than 20.

Ans. Select avg(price), type from vehicles group by type having qty>20;

b Count the type of vehicles manufactured by each company.

Ans. Select count(type),type,company from vehicles group by company;

c Display the total price of all the types of vehicles.

Ans. Select sum(price) from vehicles group by type

2 In a database there are two tables : Write MYSQL queries for (i) to (iii)

Table : Item

<u>Icode</u>	<u>IName</u>	Price	Color	<u>VCode</u>
S001	Mobile Phones	30000	Silver	P01
S002	Refrigerator	20000	Cherry	P02
S003	TV	45000	Black	P03
S004	Washing Machine	12000	White	P04
S005	Air Conditioner	50000	White	P05

Table : Vendor

<u>VCode</u>	<u>VName</u>
P01	Rahul
P02	Mukesh
P03	Rohan
P04	Kapil

(i) To display ICode, IName and VName of all the vendors, who manufacture "Refrigerator".

(ii) To display IName, ICode, VName and price of all the products whose price >=23000

(iii) To display Vname and IName manufactured by vendor whose code is "P04".

Ans (i) Select ICode, IName, VName from Item I, Vendor V where I.Vcode=V.VCode and IName='Refrigerator'

(ii) Select IName, ICode, VName from Item I, Vendor V where I.Vcode=V.VCode and Price >=23000

(iii) Select VName, IName from Item I, Vendor V where I.Vcode=V.VCode and I.VCode='P04'

PART B, Section III (5 marks)

1 Considering the Visitor table data, write the query for

<u>VisitorID</u>	<u>VisitorName</u>	<u>Gender</u>	<u>ComingFrom</u>	<u>AmountPaid</u>
1	Suman	F	Kanpur	2500
2	Indu	F	Lucknow	3000
3	Rachana	F	Haryana	2000
4	Vikram	M	Kanpur	4000
5	Rajesh	M	Kanpur	3000
6	Suresh	M	Allahabad	3600
7	Dinesh	M	Lucknow	
8	Shikha	F	Varanasi	5000

(i) Write a query to display VisitorName, Coming From details of Female Visitors with Amount Paid more than 3000

(ii) Write a query to display all coming from location uniquely

(iii) Write a query to insert the following values- 7, „Shilpa“, „F“, „Lucknow“, 3000

(iv) Write a query to display all details of visitors in order of their AmountPaid from highest to lowest

(v) Write a query to display visitor name with annual amount paid

- Ans.**
- (i) Select VisitorName, ComingFrom from Visitor AmountPaid > 3000
 - (ii) Select distinct ComingFrom from Visitor
 - (iii) insert into visitor values(7, 'Shilpa', 'F', 'Lucknow', 3000)
 - (iv) Select * from visitor order by AmountPaid desc
 - (v) select visitorname, amountpaid * 12 from visitor;

Queries using Having and Group By Clauses

1 Which of the following clause cannot be used with WHERE?

- a) IN
- b) Between
- c) Group by
- d) None of the above

Ans Group By

2 Which of the following clause can be used with Group By?

- a) Having
- b) Where
- c) Order by
- d) None

Ans Having and Order By

3. Write down name of four functions that can be used with Group by?

Ans Count(), sum(), min(), max()

4. What is Group By clause?

Ans The GROUP BY Clause is utilized in SQL with the SELECT statement to organize similar data into groups. It combines the multiple records in single or more columns using some functions. Generally, these functions are aggregate functions such as min(),max(),avg(), count(), and sum() to combine into single or multiple columns.

5. Why we use Having clause?

Ans The HAVING clause was added to SQL because the WHERE keyword could not be used with aggregate functions.

6. What is the purpose of Group By clause?

Ans Group by clause is used in a Select statement in conjunction with aggregate functions to group the result based on distinct values in column.

7. You have a table "Company" having column cno, cname, department and salary. Write SQL statement to display average salary of each department.

Ans SELECT department, avg(salary)
from company
Group by department;

8. Can a Group by clause be used for more than one column? If yes, given an example.

Ans Yes.
Select name, grade, class
From student
Group by Class, grade

9. Anis has given the following command to arrange the data in ascending order of date.

Select * from travel where order by tdate;

But he is not getting the desired result.

Help him by choosing the correct command.

- a. Select * from travel order by tdate;
- b. Select * from travel in ascending order;
- c. Select tdate from travel order by tdate;

Ans . Select * from travel order by tdate;

10. Choose the correct query to count the number of codes in each code type from travel table?

- i. select count(code) from travel ;
- ii. select code, count(code) from travel group by code;
- iii. select code, count(distinct code) from travel;
- iv. select code, count(distinct code) from travel group by code;

Choose the correct option:

- a. Both (ii) and (iii)
- b. Both (ii) and (iv)
- c. Both (i) and (iii)
- d. Only (ii)

Ans B

11 Identify the name of connector to establish bridge between Python and MySQL

1. mysql.connection
2. connector
3. mysql.connect
4. mysql.connector

Ans 4. mysql.connector

12 Which function of connection is used to check whether connection to mysql is successfully done or not?

```
import mysql.connector as msq
con=msq.connect(#ConnectionString)      # Assuming all parameter required as
passed if ____:
print("Connected!")
else:
print(" Error! Not Connected")
```

- a) con.connected()
- b) con.isconnected()
- c) con.is_connected()
- d) con.is_connect()

Ans c) con.is_connected()

13 What is the difference in fetchall() and fetchone()?

Ans fetchall() function is used to fetch all the records from the cursor in the form of tuple.

fetchone() is used to fetch one record at a time. Subsequent fetchone() will fetch next records. If no more records to fetch it return None.

14 The kind of join that will return all the rows from the left table in combination with the matching records or rows from the right table.

Ans Left Join