

1 Mark Questions/Answers

1. What is MySQL?

Ans MySQL is a Relational Database Management System.

2. Charvi is inserting "Sharma" in the "LastName" column of the "Emp" table but an error is being displayed. Write the correct SQL statement.

INSERT INTO Emp('Sharma') VALUES (Lastname) ;

Ans INSERT INTO Emp(Lastname) VALUES ('Sharma') ;

2. Kunal created the following table with the name 'Friends':

FriendCode	Nsme	Hobbies
F101	Bijoy	Swimming
F102	Abhinav	Reading books
F103	Jyotsna	Dancing

Now, Kunal wants to delete the 'Hobbies' column. Write the MySQL statement.

Ans ALTER TABLE Friends DROP Hobbies; OR
ALTER TABLE Friends DROP COLUMN Hobbies;

3. Mrs. Sen entered the following SQL statement to display all Salespersons of the cities "Chennai" and 'Mumbai' from the table 'Sales'.

Table :Sales

SCode	Name	City
101	Aakriti	Mumbai
102	Aman	Punjab
103	Banit	Delhi
104	Fauzia	Mumbai

**SELECT * FROM Sales
WHERE City='Chennai'
AND City='Mumbai';**

Rewrite the correct statement if wrong or write statement is correct.

Ans SELECT * FROM Sales
WHERE City='Chennai'
OR City='Mumbai';
OR
SELECT * FROM Sales
WHERE City='Chennai' || City='Mumbai'; OR
SELECT * FROM Sales
WHERE City IN ('Chennai', 'Mumbai');

4. (i) Name 2 Aggregate (Group) functions of SQL. 2
SUM(), MAX(), MIN(), AVG(), COUNT(), COUNT(*) (Any Two)
(ii) Consider the table:

Table: Company

SID	SALES
S101	20000
S103	NULL
S104	10000
S105	15000

What output will be displayed by the following SQL statement?

SELECT AVG(SALES) FROM Company;

Ans 15000

5. What is the meaning of 'Open source' in the term 'Open Source Database Management System'?

Ans Open source means that the software can be studied, copied, redistributed freely and even modified according to one's need without seeking any kind of permission. In order to modify such software the developers also provide the source code to the users.

6. In a table 'Employee', a column 'Occupation' contains many duplicate values. Which keyword would you use if you wish to list only different values?

Ans The DISTINCT keyword can be used to return only distinct (different) values.

7. How is ALTER TABLE statement different from UPDATE statement?

Ans

ALTER TABLE	UPDATE
To modify structure of a table	To modify data in a table
DDL command	DML command

8. Charvi wants to delete the records where the "FirstName" is "Rama" in the 'Emp' Table. She has entered the following SQL statement. An error is being displayed. Rewrite the correct statement.

DELETE 'Rama' FirstName FROM Emp;

Ans DELETE FROM Emp WHERE FirstName = 'Rama';

9. Name 2 Group (Aggregate) functions of SQL.

Ans SUM(), MAX(), MIN(), AVG(), COUNT(), COUNT(*)

10. Consider the table:

Table: Company

CompanyCode	Donations
C101	13000
C102	NULL
C10	7000
C105	4000

What output will be displayed by the following SQL statement:

SELECT AVG(Donations) FROM Company

Ans 8000

10. Consider the table 'empsalary'.

ID	Salary
101	43000
102	NULL
104	56000
107	NULL

To select tuples with some salary, Siddharth has written the following erroneous SQL statement:

SELECT ID, Salary FROM empsalary WHERE Salary = something;

Write the correct SQL statement.

Ans: SELECT ID, Salary FROM empsalary WHERE Salary is NOT NULL;

11. Consider the table 'Employee'.
Employee

Name	Location
Gurpreet	Mumbai
Jatinder	Chennai
Deepa	Mumbai
Harsh	Chennai
Simi	New Delhi
Anita	Bengaluru

Write the SQL command to obtain the following output :

Location
Mumbai
Chennai
New delhi
Bangaluru

Ans: SELECT DISTINCT Location FROM Employee;

12. While creating the table Student last week, Ms. Sharma forgot to include the column Game_Played. Now write a command to insert the Game_Played column with VARCHAR data type and 30 size into the Student table?

Ans: Alter Table Student Add (Game_Played VARCHAR(30));

13. In 'Marks' column of 'Student' table, for Rollnumber 2, the Class Teacher entered the marks as 45. However there was a totaling error and the student has got her marks increased by 5. Which MySQL command should she use to change the marks in 'Student' table.

Ans: UPDATE command

14. Ms Sneha is working in a software company. She works under MySQL database. She forgot the name of the tables which she worked in last week. What MySQL statement she should use to know the tables?

Ans. SHOW TABLES;

15. A numeric data field CNT contains 35675.8765. Write a command to round of CNT to
(i) Whole number.

(ii) Upto 3 decimal places.

Ans. (i) SELECT ROUND(CNT, 0);
(ii) SELECT ROUND(CNT, 3);

16. Ms. Ankita enter the following SQL statement to display all the department of "MUMBAI" and "KOLKATTA" from the table DEPT.

TABLE: DEPT

DCODE	DEPARTMENT	CITY
D01	MEDIA	DELHI
D02	MARKETING	DELHI
D03	INFRASTRUCTURE	MUMBAI
D05	FINANCE	KOLKATTA
D04	HUMAN RESOURCE	MUMBAI

SELECT * FROM DEPT

WHERE CITY='MUMBAI' AND CITY='KOLKATTA';

Rewrite the statement, if it is incorrect or else write the word 'CORRECT'.

Ans. The correct statement is:

```
SELECT * FROM DEPT  
WHERE (City='MUMBAI' OR City='KOLKATTA');
```

17. Mr. Satish wants to remove a column AC_Type from Account table. What MySQL command should he use?

Ans. The MySQL command is as follow:

```
ALTER TABLE Account DROP COLUMN AC_Type;
```

18. A table APS has 4 rows and 3 columns and another table ORDER has 3 rows and 4 columns. How many rows and columns will be there if we obtain the Cartesian product of these two tables?

Ans. 12 rows and 7 columns.

19. Mr. Sanjeev is working as a database administrator in a company and wants to change his database DEPT table of 'MARKETING' department to 'SALES'. He entered the following SQL statement and found some error.

TABLE: DEPT

DCODE	DEPARTMENT	CITY
D01	MEDIA	DELHI
D02	MARKETING	DELHI
D03	INFRASTRUCTURE	MUMBAI
D05	FINANCE	KOLKATTA
D04	HUMAN RESOURCE	MUMBAI

```
UPDATE TABLE DEPT WITH DEPARTMENT = 'SALES'
```

Rewrite the statement, if it is incorrect or else write the word 'CORRECT'.

Ans. The correct statement is:

```
UPDATE DEPT SET DEPARTMENT = 'SALES'  
WHERE DEPARTMENT = 'MARKETING';
```

2 Marks Questions/Answers

1. Given below is the 'Stu' table:

RNO	NAME
1	Amit
2	Bhishm

The following Statements are entered:

```
SET AUTOCOMMIT = 0;
INSERT INTO Stu VALUES(5,'Rahul');
COMMIT;
UPDATE Stu set name='Rahuliya' where Rno= 5;
SAVEPOINT A;
INSERT INTO Stu VALUES(6,'Cristina');
SAVEPOINT B;
INSERT into Stu values(7,'Fauzia');
SAVEPOINT C;
ROLLBACK TO B;
Now what will be the output of the following statement:
SELECT * FROM Stu;
```

Ans.

RNO	NAME
1	Amit
2	Bhishm
5	Rahuliya
6	Cristina

2. Consider the table 'Hotel' given below.

Table : Hotel

EMPID	Category	Salary
E101	MANAGER	60000
E102	EXECUTIVE	65000
E103	CLERK	40000
E104	MANAGER	62000
105	EXECUTIVE	50000
E106	CLERK	35000

Mr. Vinay wanted to display average salary of each Category. He entered the following SQL statement. Identify error(s) and Rewrite the correct SQL statement.

```
SELECT Category, Salary
FROM Hotel
GROUP BY Category;
```

Ans. SELECT Category, AVG(Salary)
FROM Hotel
GROUP BY Category;

3. Anita has created the following table with the name 'Order'.

Table: Order

Column Name	Constraint
OrderId	Primary Key
Order Date	Not Null

Order Amount	
StoreId	

One of the rows inserted as a follows:

OrderId	OrderDate	OrderAmount	StoreId
0101	2015-02-12	34000	S104

i. What is the data type of columns OrderId and OrderDate in the table Order ?

Ans Data type of OrderId : varchar/char

Data type of OrderDate : date

ii. Anita is now trying to insert the following row:

OrderId	OrderDate	OrderAmount	StoreId
0102	NULL	59000	S105

Will she be able to successfully insert it? Give reason.

Ans (ii) No

Reason – Not Null Constraint applied on attribute AnimalName

4. Write the output of the following SQL queries:

(i) SELECT MID('BoardExamination', 2, 4);

Ans oard

(ii) SELECT ROUND(67.246, 2);

Ans 67_25

(iii) SELECT INSTR('INFORMATIONFORM', 'FOR');

Ans 3

(iv) SELECT DAYOFYEAR('20150110');

Ans 10

5. Given below is the 'Emp' table:

ENO NAME

1 Anita Khanna

2 Bishmeet Singh

SET AUTOCOMMIT = 0;

INSERT INTO Emp VALUES(5,'Farzia');

COMMIT;

UPDATE Emp SET NAME ='Farzziya' WHERE Eno= 5;

SAVEPOINT A;

INSERT INTO Emp VALUES(6,'Richard');

SAVEPOINT B;

INSERT INTO Emp VALUES(7,'Rajyalakshmi');

SAVEPOINT C;

ROLLBACK TO B;

What will be the output of the following SQL query now:

SELECT * FROM Emp;

Ans.

ENO	NAME
1	Anita Khanna
2	Bishmeet Singh
5	Farzziya
6	Richard

6. Consider the table below.

Table: Company

EMPID	DEPARTMENT	SALARY
E101	PERSONNEL	60000
E102	ACCOUNTS	65000
E103	MARKETING	40000
E104	PERSONNEL	62000
E105	PERSONNEL	50000
E106	MARKETING	350000

Identify error(s) in the following SQL statement. Rewrite the correct SQL statement.

```
SELECT Department, Salary  
FROM Company  
GROUP BY Department;
```

Ans. Some aggregate function like AVG(),SUM(), MAX(), MIN() etc. should be mentioned with SELECT .

```
SELECT DEPARTMENT, AVG(SALARY)  
FROM COMPANY  
GROUP BY DEPARTMENT;
```

7. Srishti has created the following table with the name 'Veterinary'.

Column Name	Constraint
AnimalId	Primary Key
VacinantionsDate	
AnimalName	Not Null
OwnerName	

One of the rows inserted is as follows:

AnimalId	VaccinationDate	AnimalName	OwnerName
A101	2015-02-12	Sheru	Amit Sharma

(i) What are the data type of columns AnimalId and VaccinationDate in the table Veterinary ?

Ans Data type of AnimalId : Varchar/char
Data type of VaccinationDate : Date

(ii) Srishti is now trying to insert the following row

AnimalId VaccinationDate AnimalName OwnerName

A102 2015-08-09 NULL Abhimanyu Shah Will she be able to successfully insert it? Give reason.

Ans No

Reason – Not Null Constraint applied on attribute AnimalName

8. Write the output of the following SQL queries:

(i) SELECT MID('LearningIsFun',2,4);

Ans MID('LearningIsFun',2,4)
Earn

(ii) SELECT ROUND(76.384,2);

Ans ROUND(76.384,2)
76.38

(iii) SELECT INSTR('INFORMATION FORM','RM');

Ans INSTR('INFORMATION FORM','RM')
5

(iv) SELECT DAYOFYEAR('20150130');

Ans DAYOFYEAR('20150130')
30

9. Write SQL query to create a table 'Song' with the following structure:

Field	Type	Constraint
Songid	Integer	Primary key
Title	Varchar(50)	
Duration	Integer	
ReleaseDate	Date	

Ans CREATE TABLE Song
(
SongId Integer PRIMARY KEY,
Title Varchar(50),
Duration Integer,
ReleaseDate Date
);

10. Consider the tables given below.

Table: Party

PartyId	Description	Cost Per Person
P101	Birthday	400
P102	Wedding	700
P103	Farewell	350
P104	Engagement	450

Table: Client

ClientId	ClientName	Address	Phone	NoOfGuests	PartyId
C101	A.K. Antony	A-151, Adarsh Nagar	99101956	80	P101
C102	Fauzia Aria	K-5/52, Vikas Vihar	893466448	500	P102
C103	Rashi Khanna	D-6, Hakikat Nagar	981166568	50	P101
C104	S.K. Chandra	76-A/2, MG Colony, Adarsh Avenue.	65877756	100	P104

(i) Name the Primary keys in both the tables

Ans Primary key (Table : Party) - PartyId
Primary key (Table : Client) - ClientId

(ii) 'P101' data is present twice in column 'PartyId' in 'Client' table – Is there any discrepancy?
Give reason for your answer.

Ans There is no discrepancy. PartyId is not the Primary key in table Client, hence repetition is permissible.

11. Consider the table 'Teacher' given below.

TeacherId	Department	Periods
T101	Science	32
T102	Null	30
T103	Mathematics	34

What will be the output of the following queries on the basis of the above table:

(i) Select count(Department) from Teacher;

(ii) Select count(*) from Teacher;

Ans: i. 2 ii. 3

12. Consider the Stu table

Roll No.	Name
1	Ashi
2	Bimmi
4	Akash

The following SQL queries are executed on the above table

```
INSERT INTO Stu VALUES(5,'Gagan');
```

```
COMMIT;
```

```
UPDATE Stu SET name='Abhi' WHERE Rollno = 4;
```

```
SAVEPOINT A;
```

```
INSERT INTO Stu VALUES(6,'Chris');
```

```
SAVEPOINT B;
```

```
INSERT INTO Stu VALUES(7,'Babita');
```

```
SAVEPOINT C;
```

```
ROLLBACK TO B;
```

What will be the output of the following SQL query now:

```
SELECT * FROM Stu;
```

Ans: Output:

1 Ashi

2 Bimmi

4 Abhi

5 Gagan

6 Chris

13. An attribute A of datatype varchar(20) has the value "Amit" . The attribute B of datatype char(20) has value "Karanita" . How many characters are occupied in attribute A ? How many characters are occupied in attribute B?

Ans: 4, 20

14. Mrs. Sharma is the classteacher of Class 'XII A' She wants to create a table 'Student' to store details of her class.

i) Which of the following can be the attributes of Student table?

a) RollNo b) "Amit" c) Name d) 25

ii) Name the Primary key of the table 'Student' . State reason for choosing it.

Ans: i. a) RollNo b) Name
 ii. Primary Key: RollNo as it will be unique for each student of the class.

15. Write the output of the following SQL queries:
 i) SELECT TRUNCATE(8.975,2);
 ii) SELECT MID('HONESTY WINS',3,4);
 iii) SELECT RIGHT(CONCAT('PRACTICES','INFORMATICS'),5);
 iv) SELECT DAYOFMONTH('2015-01-16');

Ans: i. 8.97
 ii. NEST
 iii. ATICS
 iv. 16

16. Write SQL query to create a table 'Player' with the following structure:

Field	Type	Constraint
playerid	Integer	Primary key
name	Varchar(50)	
height	Integer	
weight	Integer	
datebirth	Date	
teamname	Varchar(50)	

Ans: CREATE TABLE Player (
 playerID integer PRIMARY KEY,
 name varchar(50),
 height integer,
 weight integer,
 datebirth date,
 teamname varchar(50));

17. Consider the table given below
 Salesperson

SalespersonId	Name	Age	Salary
1	Ajay	61	140000
2	Sunil	34	44000
3	Chris	34	40000
4	Amaaya	41	52000

Orders

OrderId	SalespersonId	Amount
10	2	54000
20	7	18000
30	1	46000
40	5	24000

- The SalespersonId column in the "Salesperson" table is the _____ KEY. The SalespersonId column in the "Orders" table is a _____ KEY.
- Can the 'SalespersonId' be set as the primary key in table 'Orders'. Give reason.

Ans: i. Primary, Foreign
 ii. No as it may be repeated in Orders table.

18. What is meant by Cardinality of a table? Give an example.

Ans. The number of tuples (rows) in the relation is called its Cardinality. For example, consider the table:

TABLE: PAINT

Name	Code	Category	Title	Status	Price	Year
G. Hussain	2098	Water	Demons	Sold	70000	1980
J. Juneja	3099	Oil	Twilight	Not sold	8000	1990

Y.D. Sharma	8001	College	Masses	Sold	9500	1968
-------------	------	---------	--------	------	------	------

There are total 3 records in a table. So, the cardinality of the above table is 3.

19. Differentiate between CREATE TABLE and ALTER TABLE commands.

Ans. CREATE TABLE command is used to create table a new table on the database. With this command, you can specify a name, type, precision and scale for each field of the table. The syntax is as follows:

```
CREATE TABLE <create table>
(column_name data_type(size),
.....,
.....,
.....);
```

For example,

```
CREATE TABLE student
(roll_no NUMBER(4) NOT NULL,
name VARCHAR2(20),
d_o_b DATE,
fees NUMBER(8,2),
grade CHAR(1));
```

ALTER TABLE command is used to change the structure of the table. We can add new column, change the data type of column or drop any constraint using alter command. Adding a column is straight forward and similar to creating a table. The syntax is as follows:

```
ALTER TABLE table_name
ADD/MODIFY/DROP(column_name data_type(size));
```

For example,

```
ALTER TABLE student
ADD (ADDRESS VARCHAR2(30));
```

20. Name the commands/clauses for the following:

- (i) To create the table.
- (ii) To change the structure of the table.

Ans. (i) CREATE TABLE
(ii) ALTER TABLE

21. What will be the output of the following queries on the basis of SALESITEM table:

Item No	Item Name	Item Amount
IT001	Tata Steel	255600
IT002	Jindal Steel	NULL
IT003	Mittal Steel	655000

- (i) SELECT AVG(ItemAmount) FROM SALESITEM;
- (ii) SELECT ItemAmount+100000 FROM SALESITEM WHERE ItemNo = 'IT002';

Ans. (i) 455300
(ii) NULL

22. Differentiate between COMMIT and ROLLBACK.

Ans. **COMMIT.** The commit statement is used to end a transaction and make all changes permanent. Until a transaction is committed, other users cannot see the changes made to the database by the transaction. COMMIT also releases any locks acquired by the transaction. The syntax is as follows:

```
COMMIT [WORK];
```

Where WORK keyword is optional.

ROLLBACK. The ROLLBACK statement is used to end a transaction and undo the work done by that transaction. It is as if the transaction had never begun. The syntax is as follows:

ROLLBACK [WORK];

Where work keyword is optional, Like COMMIT, ROLLBACK also release any lock acquired by the transaction.

23. Write the resulting output of the following:

- (i) SELECT 1000 + SQRT(100);
- (ii) SELECT TRIM(' ABS Public School ');
- (iii) SELECT FLOOR(100.34) + ABS(200.43);
- (iv) SELECT LOWER('abs Public School');

- Ans.
- (i) 1010
 - (ii) ABS Public School
 - (iii) 300.43
 - (iv) abs public school

24. Write the SQL command to create the table EMPLOYEE including its constraints.

TABLE: EMPLOYEE

Name of Column	Type	Constraint
ID	INT(4)	PRIMARY KEY
First_Name	VARCHAR(15)	NOT NULL
Last_Name	VARCHAR(15)	NOT NULL
Email_ID	VARCHAR(15)	NOT NULL
Salary	INT(10)	DEFAULT 1000

Ans. The command is as follows:

```
CREATE TABLE EMPLOYEE
  (ID INT(4) PRIMARY KEY,
  First_Name VARCHAR(15) NOT NULL
  Last_Name VARCHAR(15) NOT NULL
  Email_ID VARCHAR(15) NOT NULL
  Salary INT(10) DEFAULT 1000);
```

25. In a database there are two tables 'Display' and 'Model' as shown below:

Table: Display

DispID	DispName	DispHO	ContPerson
1	Tital	Okhla	C.B.Ajit
2	Maxima	Shahdra	V.P.Kohli
3	Ajanta	Najafgarh	R.Mehta

Table: Model

ModelNo	DispID	ModelCost
T020	1	2000
M032	4	2500
M059	2	7000
A167	3	800
T024	1	1200

- (i) Identify the foreign key column in the table model.
 - (ii) Check every value in DispID column of both the tables. So you find any discrepancy?
- (b) (i) DispID
- (ii) Yes, in the 2nd row of model table the value of DispID is 4. This DispID does not exist in the table display.

26. What is Primary Key in a table? Give an Example.

Ans. **Primary Key.** It is that column/field which uniquely identifies each records of the table. Primary key field of a table does not contain null values.

For example, consider the table student with the fields (Adm_no, Name, Class, Sec) in this Table Adm_no will be unique for every, so it can serve as a primary key.

27. Differentiate between SQL command INSERT and ALTER.

Ans. The INSERT command adds a new record to the end of an existing database. The syntax is as:

```
[(<column <table_name>  
[(<column name1> [, <column name2> [, ...]])]  
VALUES (<expr1> [, <expr2> [, ...]])];
```

For example,

```
INSERT INTO student
```

```
VALUES (100, 'Ram Prakash', '2004-2003-10', 'A', 'F-10, Saket Kunj, New Delhi');
```

The alter command is used to change the table. We can add a new column, change the data type of a column or drop any constraint using alter command. Adding a column is straight forward and similar to creating a table. The syntax is as follows:

```
ALTER TABLE table_name
```

```
ADD/MODIFY/DROP(<column_name> <data_type> <size>);
```

For example,

```
ALTER TABLE student
```

```
ADD (ADDRESS VARCHAR(30));
```

28. Name the commands/clause:

(i) To describe the structure of the table.

(ii) To delete the table physically.

(iii) To view record in specified range.

(iv) To view record in specified list.

Ans. (i) DESC (ii) DROP TABLE (iii) BETWEEN (iv) IN

29. A table name MITEM has the following contents:

ICODE	INAME	IPRICE
101	CHAIR	1500.00
102	DINNING TABLE	24000.00

Write the output that will be displayed by SELECT statement as the SQL statement given below are executed.

```
SET AUTOCOMMIT = 0;  
INSERT INTO MITEM VALUES(103;'COFFEE TABLE',340);  
ROLLBACK;  
START TRANSACTION;  
UPDATE MITEM SET IPRICE = IPRICE +200;  
SAVEPOINT S1;  
UPDATE MITEM SET IPRICE = IPRICE +400;  
ROLLBACK TO S1;  
SELECT * FROM MITEM;
```

Ans. The output is:

ICODE	INAME	IPRICE
101	CHAIR	1700.00
102	DINNING TABLE	24200.00

30. Differentiate between GRANT and REVOKE.

Ans. The GRANT command is used to give permission to one user to access the table of another user or do any other desired operation according to the privileges assigned.
The REVOKE statement is used to remove the privileges granted by the GRANT statement.

31. Write the resulting output of the following:

- (i) SELECT ROUND(1023,432,1);
- (ii) SELECT LENGTH('RAMESH SHARMA');
- (iii) SELECT UPPER('master');
- (iv) SELECT MOD(ROUND(120, 60, 1), 5);

Ans. (i) 1023.4 (ii) 13 (iii) MASTR (iv) 0.6

32. Write the SQL command to create the table voter including its constraints.

Table: VOTER

Column Name	Data Type	Size	Constraint	Description
V_ID	INT	8	Primary key	Voter identification
Vname	VARCHAR	25	NOT NULL	Name of the voter
Age	INT	3	CHECK > 17	Age should not less than equal to 17
Address	VARCHAR	30		Address of voter
Phone	VARCHAR	10		Phone number of the voter

Ans. The command is as follows:

```
CREATE TABLE VOTER (V_ID INT(8) Primary key,
Vname VARCHAR(25) NOT NULL,
Age INT(3) CHECK Age > 17,
Address VARCHAR(30),
Phone VARCHAR(10));
```

33. In a database there are two tables 'Client' and 'Bill' as shown below:

Table: Client

ClientID	ClientName	ClientAddress	ClientPhone
1	Akhilesh Narang	C4, Janak Puri, Delhi	9811078987
2	Purnima Williams	B1, Ashok Vihar, Delhi	9678678711
3	Sumedha Madaan	33, South Ext., Delhi	6767655412

Table: Bill

BillNo	ClientID	Bill_Amt
1	2	12000
2	1	15000
3	2	13000
4	3	13000
5	2	14000

(i) How many rows and how many columns will be there in the Cartesian product of these two tables?

(ii) Which column in the 'Bill' table is the foreign key?

Ans. (i) 15 rows and 7 columns (ii) ClientID

1. Write commands in SQL for (i) to (iv) and output for (v) and (vi).

Table: Store

StoreId	Name	Location	City	No. of Employees	Date opened	Sales Amount
S101	Planet fashion	KarolBagh	Delhi	7	2015-10-16	300000
S102	Trends	Nehru Nagar	Mumbai	11	2015-08-09	400000
S103	Vogue	Vikash Vihar	Delhi	10	2015-06-27	200000
S104	Super fashion	Defence Colony	Delhi	8	2015-02-18	450000
S105	Rage	Bandra	Mumbai	5	2015-09-22	600000

(i) To display name, location, city, SalesAmount of stores in descending order of SalesAmount.

Ans SELECT Name,Location,City, SaleAmount
FROM Store
ORDER BY SaleAmount desc;

(ii) To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.

Ans SELECT Name,SalesAmount
FROM Store
WHERE Name like '%fashion%';

(iii) To display Stores names, Location and Date Opened of stores that were opened before 1 st March 2015.

Ans SELECT Name,Location,DateOpened
FROM Store
WHERE DateOpened <'03/01/2015';
OR
SELECT Name,Location,DateOpened
FROM Store
WHERE DateOpened <03012015;

(iv) To display total SalesAmount of each city along with city name.

Ans SELECT SUM(SalesAmount),City
FROM Store
GROUP BY City;

Table:Course

CourseId	Subject	TeacherId	Fee
C101	Introductory Mathematics	T101	4500
C103	Physics	T101	5000
C104	Introductory Computer Science	T102	4000
C105	Advance Computer Science	T104	6500

(i) Which column is used to relate the two tables?

Ans TeacherId column is used to connect the two tables.

(ii) Is it possible to have a primary key and a foreign key both in one table? Justify your answer with the help of table given above.

Ans Yes. As in the Table:Course, CourseId can be used as Primary key and TeacherId is the foreign key.

2. With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) :

(i) To display CourseId, TeacherId, Name of Teacher, Phone Number of Teachers living in Delhi.

Ans

```
SELECT CourseId, TeacherId, Name, PhoneNumber
FROM Course, Faculty
WHERE Course.TeacherId = Faculty.TeacherId
AND city = 'Delhi';
```

(ii) To display TeacherID, Names of Teachers, Subjects of all teachers with names of Teachers starting with 'S'.

Ans

```
SELECT TeacherId, Name, Subject FROM Faculty, Course WHERE Faculty.TeacherId = Course.
TeacherId AND Name like 'S%';
```

(iii)

```
SELECT CourseId, Subject, TeacherId, Name, PhoneNumber FROM Faculty, Course WHERE
Faculty.TeacherId = Course.TeacherId AND Fee >=5000;
```

Ans

CourseId	Subject	TeacherId	Name	PhoneNumber
C103	Physics	T101	Savita Sharma	991019564
C105	Advance computer science	T104	Simi Arora	658777564

3. Table "Order" is shown below. Write commands in SQL for (i) to (iv) and output for (v) and (vi)

Table: Order

OrderId	OrderDate	SalesPerson	OrderAmount
0101	2015-09-12	Ravi Kumar	34000
0102	2015-08-15	Rashmi Arora	50000
0103	2015-11-01	Ravi Kumar	55000
0104	2015-12-09	Manjeet Singh	60000
0105	2015-11-10	Rashmi Arora	50000

(i) To display names of Salespersons (without duplicates).

Ans SELECT DISTINCT SalesPerson
FROM Order;

(ii) To list Orderid and respective Order amount in descending order of order amount.

Ans SELECT OrderId,OrderAmount
FROM Order
ORDER BY OrderAmount desc;

(iii) To count the number of orders booked by Salespersons with names starting with 'R'

Ans SELECT COUNT(*)
FROM Order
WHERE SalesPerson LIKE "R%";

(iv) To list Order ids, order dates and order amounts that were booked after 1st September 2015.

Ans SELECT OrderId,OrderDate,OrderAmount
FROM Order
WHERE OrderDate >'20150901';

(v) SELECT OrderId, OrderAmount FROM Order where

OrderAmount between 50000 and 60000;

Ans.

OrderId	OrderAmount
0102	50000
0103	55000
0104	60000
0105	50000

(vi) SELECT concat(OrderId,SalesPerson),

length(SalesPerson) FROM Order;

Ans.

concat(OrderId, Salesperson)	Length (Salesperson)
0101Ravi Kumar	10
0102Rashmi Arora	12
0103Ravi Kumar	10
0104Manjeet Singh	13
0105Rashmi Arora	12

4. With reference to the above given tables (in Q6 b), Write commands in SQL for (i) and (ii) and output for (iii) given below:

(i) To display Client names of clients, their phone numbers, PartyId and party description who will have number of guests more than 50 for their parties.

Ans SELECT C.CLIENTNAME, C.PHONE, P.PARTYID,
P.DESCRPTION
FROM PARTY P, CLIENT C
WHERE P.PARTYID = C.PARTYID
AND C.NOOFGUESTS > 50;

(ii) To display Client Ids, their addresses, number of guests of those clients who have 'Adarsh' anywhere in their addresses.

ClientId ClientName Address Phone NoOfGuests PartyId
Ans SELECT CLIENTID, ADDRESS, NOOFGUESTS
FROM CLIENT
WHERE ADDRESS LIKE '%Adarsh%';

(iii) SELECT ClientId, ClientName, NoOfGuests,
description, Costperperson, FROM Client, Party WHERE
Client.Partyid= Party.Partyid AND NOofGuests BETWEEN
50 AND 100

<u>ClientId</u>	<u>ClientName</u>	<u>NoOfGuests</u>	<u>Description</u>	<u>CostPerPerson</u>
C101	A.K.Antony	80	Birthday	400
C103	Rashi Khanna	50	Birthday	400
C104	S.K.Chandra	100	Engangement	450

5. Table "Emp" is shown below. Write commands in SQL for (i) to (iv) and output for (v) and (vi)

ID	NAME	AGE	ADDRESS	SALARY	PHONE
1	Siddharth	25	A-4, Ashok Vihar, Delhi	62000	98110766656
2	Chavi	23	B-21, Model Town, Mumbai	71000	99113423989
3	Karan	26	KC-24, North Avenue, Bhopal	65000	98105393578
4	Raunaq	22	A-152, Gomti Nagar, Lucknow	89000	99101393576
5	Kunal	27	B-5/45, Uday Park, Delhi	80000	97653455654

- i. To display list of all employees below 25 years old.
- ii. To list names and respective salaries in descending order of salary.
- iii. To count the number of employees with names starting with 'K'
- iv. To list names and addresses of those persons who have 'Delhi' in their address.
- v. SELECT Name, Salary FROM Emp where salary between 50000 and 70000;
- vi. SELECT Name, phone from emp where phone like '99%';

Ans: MySQL Commands:

- i. SELECT * FROM Emp WHERE AGE<25;
- ii. SELECT NAME,SALARY FROM Emp ORDER BY SALARY desc;
- iii. SELECT COUNT(*) FROM Emp WHERE NAME LIKE "K%";
- iv. SELECT NAME,ADDRESS FROM Emp WHERE ADDRESS LIKE"%Delhi%";
OUTPUT
- v. Siddharth 62000
Karan 65000
- vi. Chavi 99113423989
Raunaq 99101393576

6. With reference to the above given tables (in Q5), Write commands in SQL for (i) and (ii) and output for (iii) below:

- i.) To display SalespersonID, names, orderids and order amount of all salespersons.
Ans: SELECT S.SalespersonID, Name, OrderID, Amount FROM Salesperson S, Orders O WHERE S.SalespersonID= O.SalespersonID;
- ii.) To display names ,salespersons ids and order ids of those sales persons whose names start with 'A' and sales amount is between 15000 and 20000.
Ans. SELECT Name,S.SalespersonID,OrderID FROM Salesperson S, Orders O WHERE S.SalespersonID=O.SalespersonID AND Name LIKE "A%" AND Amount BETWEEN 15000 AND 20000;

- iii.) `SELECT SalespersonId, name, age, amount FROM Salesperson, orders WHERE Salesperson.salespersonId= Orders.salespersonId AND AGE BETWEEN 30 AND 45;`
 Ans. 2 Sunil 34 54000
 5 Chris 34 24000

7. Table 'PAINT' is shown below. Write commands in SQL for (i) to (iv) and output for (v) to (vi).

TABLE: PAINT

Name	Code	Category	Title	Status	Price	Year
G. Hussain	2098	Water	Demons	Sold	70000	1980
J. Juneja	3099	Oil	Twilight	Not Sold	8000	1990
Y.D. Sharma	8001	College	Masses	Sold	9500	1968
A.D'SOUZA	7901	Oil	Tresses	Sold	13000	1977
Nevill	5400	Water	Holiday	Not Sold	8900	1977
A.Dasgupta	3400	Oil	Kites	Not Sold	9000	1982
S.Rohtagi	2100	Oil	Ruins	Sold	18000	1981
P.Arora	3100	Water	Castle	NotSold	20000	1965
Col Singhvi	2211	Water	Valley	Sold	7000	1962

- (i) Display the complete list of all the paintings that belong to category Water.
 (ii) Display only the most expensive painting in each category.
 (iii) Display the name of the painter, title of painting and price in descending order of price.
 (iv) Display the list of all the paintings made before the year 1970.
 (v) Select AVG(Price) from Paint where price <8500;
 (vi) Select COUNT(DISTINCT (CATEGORY)) from Paint;

- Ans. (i) `SELECT * FROM paint WHERE category = 'Water';`
 (ii) `SELECT MAX(price) FROM paint group by category;`
 (iii) `SELECT name, title, price FROM paint ORDER BY price DESC;`
 (iv) `SELECT * FROM paint WHERE YEAR < 1970;`
 (v) 7500.00
 (vi) 3

8. with reference to the two tables given below, write commands in SQL for (i) and (ii) and output for (iii):

Table: CUSTOMER

Booking_Code	Customer_Name	No_of_tkts	BClerk_Code
B001	Veer	4	BC003
B002	Milan	2	BC004
B003	Jahmu	3	BC003
B004	Michal	20	BC001
B005	Meera	5	BC001

Table: BCLERK

BClerk_Code	Name
BC001	Varsha
BC002	

Answer the following questions based on the above tables:

- (i) Write a query to display the total number of tickets booked by booking Clerk 'PAYAL'.
 (ii) Write a query to display the name of the clerk who sold maximum number of tickets.
 (iii) Select `lowe(b.name), lower(c.Customer_Name)` from customer c, bclerk b
 Where `c.bclerk_code = b.bclek_code;`

- Ans. (i) `Select count(c.No_of_tkts) from customer c, bclerk b`
 Where `c.bclerk_code = b.clerk_code and b.name = 'PAYAL';`

(ii) Select b.name, max(No_of_tkts) from customer c, bclerk b
Where c.bclerk_code = b.bclerk_code;

(iii)

lower(b.name)	lower(c.Customer_Name)
varsha	micah
varsha	meera
vineet	veer
vineet	jahmu
payal	Milan

9. Write commands in SQL for (i) to (iv) and output for (v) to (vi).

TABLE: STUDENT

No	Name	Stipend	Stream	Avgmark	Grade	Class
1	Karan	450.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12D
5	Sabina	500.00	Nonmedical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Nonmedical	88.5	A	12A
9	Vikas	500.00	Nonmedical	92.0	A	12A
10	Mohan	300.00	Commerce	67.5	C	12C

- (i) Select all the Nonmedical stream student from STUDENT.
- (ii) List the names of those students who are in class 12 sorted by Stipend.
- (iii) List all student sorted by AvgMrk in descending order.
- (iv) Display a record, listing Name, Stipend, Stream and amount of stipend received in a year assuming that the Stipend is paid every month.
- (v) Select SUM(Stipend) from STUDENT where Grade = 'B';
- (vi) Select Name, LENGTH(Name) from Students where Grade = 'C';

10. With reference to the two tables given below, write commands in SQL for (i) and (ii) and output for (iii):

Table: CUSTOMER_RECORD

C_CODE	NAME	ADDRESS	CITY	PHONE
C001	George	B-31-32 N V	Delhi	6199408
C002	Ashok	H-61 Arawali	New Delhi	6129400
C003	Raman	WZ-41 DBG Road	Delhi	6133888
C004	James	Q-31 Raj Pura	New Delhi	6144218
C005	Patrick	L-21 Vasant Vihar	New Delhi	6111228

Table: ORDER_RECORD

O_CODE	C_CODE	ORD_DATE	ITEMNAME	ORDQTY	AMOUNT
A001	C003	2016-03-22	BURGER	3	60.00
A002	C001	2016-03-24	PIZZA	2	300.00
A003	C005	2016-04-25	BURGER	5	100.00
A004	C004	2016-03-27	BURGER	5	100.00
A005	C001	2016-04-09	HOT-DOG	2	40.00

Answer the following:

- (i) Write a query to display the names of the customers along with their order code (O_CODE) who lives in NEW DELHI.

(ii) Write a query to display name of the customer who has to paid maximum amount.

(iii) select C.Name, C.ADDRESS O. ITEMNAME from CUSTOMER_RECORD C,
ORDER_DETAIL O. WHERE O. C_CODE AND O. AMOUNT > 200;

Ans. (i) select C.Name, O.O_CODE from CUSTOMER_RECORD C, ORDER_DETAIL O
WHERE O.C_CODE = C.C_CODE AND C.CITY = 'New Delhi';

(ii) select C.NAME, MAX(O.AMOUNT) from CUSTOMER_RECORD C, ORDER_DETAIL O
WHERE O.C_CODE = C.C_CODE;

(iii) NAME	ADDRESS	ITEMNAME
George	B-31-32 N V	PIZZA