

My SQL Worksheet-1
(DDL - Database Related commands)

1.	If a database "Employee" exists, which MySql command helps you to start working in that database?
	Use Employee;
2.	Write MySql command will be used to open an already existing database "LIBRARY".
	Use Library;
3.	Write MySql command to open an existing database.
	Use databasename;
4.	What does SQL stand for? What is MySQL?
	SQL Stands for structured query language. Mysql is an open source RDBMS (Relational Database Management System)
5.	Write two examples of DBMS software.
	SQL Server, My SQL, Oracle, Ingres, Postgres
6.	Sharmila wants to make the database named 'COMPANY' active. Write MySQL commands for it.
	Use Company;
7.	What is MySQL ?
	Mysql is an open source RDBMS (Relational Database Management System)
8.	What is the relationship between SQL and MySQL ?
	SQL is a language to give commands in MySQL or any other RDBMS software.
9.	Mention any two example of common Database Management System.
	SQL Server, Ingres, Postgres, MySQL
10.	Suggest Archana suitable command for the following purpose: i. To display the list of the database already existing in MySQL. ii. To use the database named City. iii. To remove the pre-existing database named Clients.
	i. Show Databases; ii. Use City; iii. Drop database clients;
11.	Write the command to display the name of the active database.
	Select Database();
12.	Write the command to create a new database "School"
	Create database school;

Informatics Practices

My SQL Worksheet-2

(DDL - Table Related commands excluding Alter table)

1.	Write an SQL query to create the table 'Menu' with the following structure: <table border="1"><thead><tr><th>Field</th><th>Type</th><th>Constraint</th></tr></thead><tbody><tr><td>ItemCode</td><td>Varchar(5)</td><td>Primary Key</td></tr><tr><td>ItemName</td><td>Varchar(20)</td><td></td></tr><tr><td>Category</td><td>Varchar(20)</td><td></td></tr><tr><td>Price</td><td>Decimal(5,2)</td><td></td></tr></tbody></table>	Field	Type	Constraint	ItemCode	Varchar(5)	Primary Key	ItemName	Varchar(20)		Category	Varchar(20)		Price	Decimal(5,2)						
Field	Type	Constraint																			
ItemCode	Varchar(5)	Primary Key																			
ItemName	Varchar(20)																				
Category	Varchar(20)																				
Price	Decimal(5,2)																				
	Create table Menu(ItemCode varchar(5) Primary key, Itemname varchar(20), Category Varchar(20), Price Decimal(5,2));																				
2.	Can a table have multiple primary keys? Can it have multiple foreign keys?																				
	No, a table cannot have multiple primary keys. There can only be one primary key. Yes, a table can a multiple foreign keys.																				
3.	In a Student table, out of Roll Number, Name, Address which column can be set as Primary key and why?																				
	RollNumber can be set as Primary Key as two students cannot have a same roll number.																				
4.	Ms. Mirana wants to remove the entire content of a table "BACKUP" alongwith its structure to release the storage space. What MySql statement should she use ?																				
	Drop Table Backup;																				
5.	Write MySql command to create the Table STOCK including its Constraints. Table STOCK :																				
	<table border="1"><thead><tr><th>Name of Column</th><th>Type</th><th>Size</th><th>Constraint</th></tr></thead><tbody><tr><td>Id</td><td>Decimal</td><td>4</td><td>Primary Key</td></tr><tr><td>Name</td><td>Varchar</td><td>20</td><td></td></tr><tr><td>Company</td><td>Varchar</td><td>20</td><td></td></tr><tr><td>Price</td><td>Decimal</td><td>8</td><td>Not Null</td></tr></tbody></table>	Name of Column	Type	Size	Constraint	Id	Decimal	4	Primary Key	Name	Varchar	20		Company	Varchar	20		Price	Decimal	8	Not Null
Name of Column	Type	Size	Constraint																		
Id	Decimal	4	Primary Key																		
Name	Varchar	20																			
Company	Varchar	20																			
Price	Decimal	8	Not Null																		
	Create table Stock(Id Decimal(4) Primary Key, Name Varchar(20), Company Varchar(20), Price Decimal(8) Not Null);																				
6.	Write one similarity and one difference between CHAR and VARCHAR data types.																				
	Similarity: Both char and varchar can store alphabets as well as numbers. Both can store same type of values. Difference: Char is a fixed length character datatype whereas varchar is a variable length character datatype.																				
7.	Saumya had previously created a table named 'Product' in a database using MySQL. Later on she forgot the table structure. Suggest her suitable MySQL command through which she can check the structure of the already created table.																				
	Describe Product;																				

8.	Roli wants to list the names of all the tables in her database named 'Gadgets'. Which command (s) she should use to get the desired result.																					
	Use Gadgets; Show tables;																					
9.	Name the SQL commands used to : (i) Physically delete a table from the database. (ii) Display the structure of a table.																					
	i) Drop table tablename; ii) Describe tablename;																					
10	Write one similarity and one difference between UNIQUE and PRIMARY KEY constraints.																					
	Similarity: Both Unique and primary key restricts duplicate values in the field. Difference: Unique allows null values whereas Primary doesnot allow null values to be inserted in the field.																					
11	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?																					
	A will occupy 4 character space. B will occupy 20 character space.																					
12	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.																					
	i) RollNo and Name can be the attributes of student table. ii) RollNo can become the primary key of the student table as two students cannot have a same roll number.																					
13	Write SQL query to create a table 'Player' with the following structure:																					
	<table border="1"> <thead> <tr> <th>Field</th> <th>Type</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>playerid</td> <td>Integer</td> <td>Primary key</td> </tr> <tr> <td>name</td> <td>Varchar(50)</td> <td></td> </tr> <tr> <td>height</td> <td>Integer</td> <td></td> </tr> <tr> <td>weight</td> <td>Integer</td> <td></td> </tr> <tr> <td>datebirth</td> <td>Date</td> <td></td> </tr> <tr> <td>teamname</td> <td>Varchar(50)</td> <td></td> </tr> </tbody> </table>	Field	Type	Constraint	playerid	Integer	Primary key	name	Varchar(50)		height	Integer		weight	Integer		datebirth	Date		teamname	Varchar(50)	
Field	Type	Constraint																				
playerid	Integer	Primary key																				
name	Varchar(50)																					
height	Integer																					
weight	Integer																					
datebirth	Date																					
teamname	Varchar(50)																					
	Create table Player(Playerid integer primary key, Name varchar(50), Height integer, Weight integer, Datebirth date, Teamname varchar(50));																					
14	Anita has created the following table with the name 'Order'.																					
	<p style="text-align: center;">Table : Order</p> <table border="1"> <thead> <tr> <th>Column Name</th> <th>Constraint</th> </tr> </thead> <tbody> <tr> <td>OrderId</td> <td>Primary Key</td> </tr> <tr> <td>OrderDate</td> <td>Not Null</td> </tr> <tr> <td>OrderAmount</td> <td></td> </tr> <tr> <td>StoreId</td> <td></td> </tr> </tbody> </table> <p>One of the rows inserted is as follows :</p>	Column Name	Constraint	OrderId	Primary Key	OrderDate	Not Null	OrderAmount		StoreId												
Column Name	Constraint																					
OrderId	Primary Key																					
OrderDate	Not Null																					
OrderAmount																						
StoreId																						

OrderId	OrderDate	OrderAmount	StoreId
O101	2015-02-12	34000	S104

(i) What is the data type of columns OrderId and OrderDate in the table Order ?
(ii) Anita is now trying to insert the following row :

OrderId	OrderDate	OrderAmount	StoreId
O102	NULL	59000	S105

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

**i) The datatype for orderID field can be either char or varchar
The datatype for orderDate is date**
ii) **She will not be able to insert the above record as she is inserting a null value in the orderdate field and the orderdate field have a not null constraint which cannot accept null values.**

15 Write SQL query to create a table 'Event' with the following structure :

Field	Type	Constraint
EventId	Varchar(5)	PRIMARY KEY
EventName	Varchar(30)	NOT NULL
Location	Varchar(50)	
ClientID	Integer	
EventDate	Date	

**Create table Event(
EventID varchar(5) Primary Key,
EventName varchar(30) not null,
Location varchar(50),
CleintID Integer,
EventDate date);**

16 Observe the given table carefully and answer the following questions:

PanNo	Name	Phoneno	Address
CIZPW123A	Rajesh Kumar	9599123456	WZ11 – Rajouri Garden, Delhi
ABWQ2341B	Hemant Kumar	9812345678	Modern Apartments, Pitampura, Delhi
DERA9786T	Naveen Sharma	7868654235	CA 22, Sector 21 Rohini, Delhi
PARD3457L	Sourabh Verma	8933217645	JD 61, Sector20, Gurgaon
GDTF8762P	Nishant Kumar	NULL	Modern Apartments, Pitampura, Delhi
MERT2376G	Hemant Kumar	9811110891	F40, Sector 19, Rohini, Delhi

i. Name the column that might have a Primary Key constraint. Justify your answer.
ii. Name the column that might have a Unique constraint. Justify your answer.

i. PanNo might have a Primary Key constraint as two person cannot have a same Pan Number.
ii. **PhoneNo might have a unique constraint as two person will be having different mobile numbers.**

17 "ABC" Event Management Company requires data of events that are to be organized. Write SQL query to create a table 'Event' with the following structure :

	Field	Type	Constraint
	EventId	Integer	Primary key
	Event	Varchar(50)	
	DateEvent	Date	
	NumPerformers	Integer	

Create table Event(EventID Integer Primary Key, Event Varchar(50), DateEvent Date, NumPerformers Integer);

18 suggest her suitable command for the following purpose:

- To display the list of the database already existing in MySQL.
- To use the database named City.
- To remove the pre-existing database named Clients.
- To remove all the records of the table named "Club" at one go along with its structure permanently.

- Show databases;**
- Use City;**
- Drop database Clients;**
- Drop table Club;**

19 While creating a table named "Employee", Mr. Rishi got confused as which data type he should chose for the column "ENAME" out of char and varchar. Help him in choosing the right data type to store employee name. Give valid justification for the same.

ENAME field can have a varchar as a datatype as two employees will not be having a same length of their names.

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My SQL Worksheet-3
(DDL - Table Related commands)

1.	Sahil created a table in Mysql. Later on he found that there should have been another column in the table. Which command should he use to add another column to the table?																														
	Alter table tablename add fieldname datatype(size);																														
2.	While creating a table 'Customer' Simrita forgot to set the primary key for the table. Give the statement which she should write now to set the column 'Custid' as the primary key of the table?																														
	Alter table customer add primary key(custid);																														
3.	Kuhu has already created a table 'Hospital' as shown below:																														
	<table border="1"> <thead> <tr> <th>Patient_No</th> <th>Patient_Name</th> <th>Disease</th> <th>Age</th> <th>Charges</th> </tr> </thead> <tbody> <tr> <td>P001</td> <td>Alya</td> <td>Viral Fever</td> <td>14</td> <td>500</td> </tr> <tr> <td>P002</td> <td>Kavita</td> <td>Lung Infection</td> <td>16</td> <td>1500</td> </tr> <tr> <td>P003</td> <td>Manya</td> <td>Cough and Cold</td> <td>20</td> <td>500</td> </tr> <tr> <td>P004</td> <td>Amar</td> <td>Bone Fracture</td> <td>22</td> <td>2500</td> </tr> <tr> <td>P005</td> <td>Deep</td> <td>Viral Fever</td> <td>15</td> <td>500</td> </tr> </tbody> </table>	Patient_No	Patient_Name	Disease	Age	Charges	P001	Alya	Viral Fever	14	500	P002	Kavita	Lung Infection	16	1500	P003	Manya	Cough and Cold	20	500	P004	Amar	Bone Fracture	22	2500	P005	Deep	Viral Fever	15	500
Patient_No	Patient_Name	Disease	Age	Charges																											
P001	Alya	Viral Fever	14	500																											
P002	Kavita	Lung Infection	16	1500																											
P003	Manya	Cough and Cold	20	500																											
P004	Amar	Bone Fracture	22	2500																											
P005	Deep	Viral Fever	15	500																											
	Now she wants to add a new column 'Address' to the above given table. Suggest suitable MySQL command for the same.																														
	Alter table hospital add address varchar(30);																														
4.	Write SQL command to remove column named 'Hobbies' from a table named 'Student'.																														

	Alter table student drop hobbies;												
5.	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?												
	Alter table student add game_played varchar(30);												
6.	<p>Kunal created the following table with the name 'Friends' :</p> <p style="text-align: center;">Table : Friends</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>FriendCode</th> <th>Name</th> <th>Hobbies</th> </tr> </thead> <tbody> <tr> <td>F101</td> <td>Bijoy</td> <td>Swimming</td> </tr> <tr> <td>F102</td> <td>Abhinav</td> <td>Reading books</td> </tr> <tr> <td>F103</td> <td>Jyotsna</td> <td>Dancing</td> </tr> </tbody> </table> <p>Now, Kunal wants to delete the 'Hobbies' column. Write the MySQL statement</p>	FriendCode	Name	Hobbies	F101	Bijoy	Swimming	F102	Abhinav	Reading books	F103	Jyotsna	Dancing
FriendCode	Name	Hobbies											
F101	Bijoy	Swimming											
F102	Abhinav	Reading books											
F103	Jyotsna	Dancing											
	Alter table friends drop hobbies;												
7.	Rashi wants to add another column 'Hobbies' with datatype and size as VARCHAR(50) in the already existing table 'Student'. She has written the following statement. However it has errors. Rewrite the correct statement. MODIFY TABLE Student Hobbies VARCHAR;												
	Alter table student add hobbies varchar(50);												
8.	Ms. Shalini has just created a table named "Employee" containing columns Ename, Department, Salary. After creating the table, she realized that she has forgotten to add a primary key column in the table. Help her in writing SQL command to add a primary key column empid. Also state the importance of Primary key in a table.												
	Alter table employee add primary key(empid);												
9.	While creating a table 'Customer' Simrita wrongly added a primary key constraint to the field "CUSTNAME". Now she wants to remove the primary key constraint from the custname field. Help her in writing the correct command.												
	Alter table customer ass primary key(custname);												
10.	Mr. Akshat have added a not null constraint to the "name" field in "employees" table. But now he wants to remove that not null constraint. Write the command to delete the not null constraint from name field.												
	Alter table employee modify name varchar(30) null;												

Informatics Practices
My SQL Worksheet-4
(DML - INSERT INTO commands)

1.	Rama is not able to change a value in a column to NULL. What constraint did she specify when she created the table?												
	Not Null, Primary Key												
2.	Consider the table RESULT given below. <p style="text-align: center;">Table : Result</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>No</th> <th>Name</th> <th>Stipend</th> <th>Subject</th> <th>Average</th> <th>Division</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Sharon</td> <td>400</td> <td>English</td> <td>38</td> <td>THIRD</td> </tr> </tbody> </table> <p>Write command to insert a new row 6, "Mohan", 500, "English", 73, "Second"</p>	No	Name	Stipend	Subject	Average	Division	1	Sharon	400	English	38	THIRD
No	Name	Stipend	Subject	Average	Division								
1	Sharon	400	English	38	THIRD								
	Insert into Result values(6, "Mohan", 500, "English", 73, "Second");												
3.	Consider the Table SHOPPE given below. Table SHOPPE : <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Code</th> <th>Item</th> <th>Company</th> <th>Qty</th> <th>City</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>102</td> <td>Biscuit</td> <td>Hide & Seek</td> <td>100</td> <td>Delhi</td> <td>10.00</td> </tr> </tbody> </table> <p>To insert a new row in the table Shoppe '110', 'Pizza', 'Papa Jones', 120, "Kolkata", 50.0</p>	Code	Item	Company	Qty	City	Price	102	Biscuit	Hide & Seek	100	Delhi	10.00
Code	Item	Company	Qty	City	Price								
102	Biscuit	Hide & Seek	100	Delhi	10.00								
	Insert into Result values('110', 'Pizza', 'Papa Jones', 120, "Kolkata", 50.0);												
4.	How is NULL value different from 0 (Zero) value?												
	Null means no value whereas 0 is a value.												
5.	Consider the following table named "GYM" Table GYM: <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>ICODE</th> <th>INAME</th> <th>PRICE</th> <th>BRANDNAME</th> </tr> </thead> <tbody> <tr> <td>G101</td> <td>Power Fit Exerciser</td> <td>20000</td> <td>Power Gymea</td> </tr> </tbody> </table> <p>Add a new row for a new item in GYM with the details: "G107", "Vibro exerciser", 21000, "GTCFitness"</p>	ICODE	INAME	PRICE	BRANDNAME	G101	Power Fit Exerciser	20000	Power Gymea				
ICODE	INAME	PRICE	BRANDNAME										
G101	Power Fit Exerciser	20000	Power Gymea										
	Insert into Result values("G107", "Vibro exerciser", 21000, "GTCFitness");												
6.	What is meant by NULL value in MySQL?												
	Null means no value												
7.	Rewrite the following SQL statement after correcting error(s). Underline the corrections made. INSERT IN STUDENT(RNO,MARKS) VALUE (5,78.5);												
	INSERT INTO STUDENT(RNO,MARKS) VALUES (5,78.5);												
8.	Rewrite the following SQL statement after correcting error(s). Underline the corrections made. INSERT IN EMP(EMPNO, SALES) VALUE (100, 20078.50);												
	INSERT INTO EMP(EMPNO, SALES) VALUES(100, 20078.50);												
9.	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) ;												
	INSERT INTO Emp(LastName) VALUES('Sharma') ;												
10.	Anita has created the following table with the name 'Order'.												

Table : Order

Column Name	Constraint
OrderId	Primary Key
OrderDate	Not Null
OrderAmount	
StoreId	

One of the rows inserted is as follows :

OrderId	OrderDate	OrderAmount	StoreId
O101	2015-02-12	34000	S104

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

(ii) Anita is now trying to insert the following row :

OrderId	OrderDate	OrderAmount	StoreId
O102	NULL	59000	S105

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

i) The datatype for orderID field can be either char or varchar

The datatype for orderDate is date

ii) She will not be able to insert the above record as she is inserting a null value in the orderdate field and the orderdate field have a not null constraint which cannot accept null values.

11 . In today's digitized world with a need to store data electronically, it is very important to store the data in the databases. SQL is used to interact with the Database Management System.

Classify the following commands according to their type :(DDL/DML)

i. INSERT INTO ii. ALTER TABLE

i. DML ii. DDL

12 . Is NULL and 0(zero) same? Justify your answer.

**No null is not same as 0. Null means no value. 0 is a value.
Any numerical calculation on null will give null
Any numerical calculation on 0 will do the actual calculation.**

13 . Write the full forms of the following:

i. DDL ii. DML

**i. Data Definition Language
ii. Data Manipulation Language**

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My SQL Worksheet-5

(DML - UPDATE and DELETE commands)

1.	What is the purpose of DROP TABLE command in SQL? How is it different from DELETE command?																												
	Drop table deletes the table along with the structure. Delete deletes the records.																												
2.	In a database there are two tables "Product" as shown below : Table : PRODUCT <table border="1" style="margin-left: 40px;"><thead><tr><th>P_ID</th><th>ProductName</th><th>Manufacture</th><th>Price</th></tr></thead><tbody><tr><td>P001</td><td>Moisturiser</td><td>XYZ</td><td>40</td></tr><tr><td>P002</td><td>Sanitizer</td><td>LAC</td><td>35</td></tr><tr><td>P003</td><td>Bath Soap</td><td>COP</td><td>25</td></tr><tr><td>P004</td><td>Shampoo</td><td>TAP</td><td>95</td></tr><tr><td>P005</td><td>Lens Solution</td><td>COP</td><td>350</td></tr></tbody></table> Write the command To increase the Price of all the Products by 20.	P_ID	ProductName	Manufacture	Price	P001	Moisturiser	XYZ	40	P002	Sanitizer	LAC	35	P003	Bath Soap	COP	25	P004	Shampoo	TAP	95	P005	Lens Solution	COP	350				
P_ID	ProductName	Manufacture	Price																										
P001	Moisturiser	XYZ	40																										
P002	Sanitizer	LAC	35																										
P003	Bath Soap	COP	25																										
P004	Shampoo	TAP	95																										
P005	Lens Solution	COP	350																										
	Update Product set price=price + 20;																												
3.	Write the UPDATE command to change "Sharma" to "Singh" in the "LastName" column in the Employee table.																												
	Update Employee set Lastname="Singh" where lastname="Sharma";																												
4.	What is the use of UPDATE statement in SQL ? How is it different from ALTER statement?																												
	Update command updates the records. Alter command modifies the structure of the table.																												
5.	Consider the following table named "GYM" Table GYM: <table border="1" style="margin-left: 40px;"><thead><tr><th>ICODE</th><th>INAME</th><th>PRICE</th><th>BRANDNAME</th></tr></thead><tbody><tr><td>G101</td><td>Power Fit Exerciser</td><td>20000</td><td>Power Gynea</td></tr><tr><td>G102</td><td>Aquafit Hand Grip</td><td>1800</td><td>Reliable</td></tr><tr><td>G103</td><td>Cycle Bike</td><td>14000</td><td>Ecobike</td></tr><tr><td>G104</td><td>Protoner Extreme Gym</td><td>30000</td><td>Coscore</td></tr><tr><td>G105</td><td>Message Belt</td><td>5000</td><td>MessagExpert</td></tr><tr><td>G106</td><td>Cross Trainer</td><td>13000</td><td>GTCFitness</td></tr></tbody></table> Write command To change the Brandname to "Fit Trend India" of the item, whose ICODE as "G101".	ICODE	INAME	PRICE	BRANDNAME	G101	Power Fit Exerciser	20000	Power Gynea	G102	Aquafit Hand Grip	1800	Reliable	G103	Cycle Bike	14000	Ecobike	G104	Protoner Extreme Gym	30000	Coscore	G105	Message Belt	5000	MessagExpert	G106	Cross Trainer	13000	GTCFitness
ICODE	INAME	PRICE	BRANDNAME																										
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G102	Aquafit Hand Grip	1800	Reliable																										
G103	Cycle Bike	14000	Ecobike																										
G104	Protoner Extreme Gym	30000	Coscore																										
G105	Message Belt	5000	MessagExpert																										
G106	Cross Trainer	13000	GTCFitness																										
	Update Gym set brandname="Fit Trend India" where Icode="G101";																												
6.	Write the UPDATE statement in MySQL to increase commission by 100.00 in the "Commission" column in the 'Emp' table.																												
	Update emp set commission=commission + 100.00;																												
7.	Write two examples of DML commands of SQL.																												
	Insert, Update, delete, select																												
8.	In a database there are two tables 'CD' and 'TYPE' as shown below :																												

Table : CD

CODE	TITLE	DURATION	SINGER	CATEGORY
101	Sufi Songs	50 min	Zakir Faiz	12
102	Eureka	45 min	Shyama Mukherjee	12
103	Nagmey	23 min	Sonvi Kumar	77
104	Dosti	35 min	Bobby	1

Table : TYPE

CATEGORY	DESCRIPTION
1	Jazz
12	Classical
40	Country Side
78	Pop

Write SQL statement to change the name of Singer "Sonvi Kumar" to "Sonvi Mehra" in all the places wherever it occurs in CD table.

Update CD set singer="Sonvi Mehra" where singer="Sonvi Kumar";

9. Consider the following table named "GARMENT".

Table : GARMENT

GCODE	GNAME	SIZE	COLOUR	PRICE
111	TShirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Top	L	Pink	1200.00

- 1) Write command To change the colour of garment with code as 116 to "Orange".
- 2) Write command to increase the price of all XL garments by 10%
- 3) Write command to delete the record with GCode "116"

- 1) Update Garment set colour="Orange" where Gcode=116;**
- 2) Update Garment set price=price+price*10/100 where size="XL";**
- 3) Delete from garment where gcode=116;**

10. In a Database, there are two tables given below :

Table : EMPLOYEE

EMPLOYEEID	NAME	SALES	JOBID
E1	SAMIT SINHA	1100000	102
E2	VIJAY SINGH TOMAR	1300000	101
E3	AJAY RAJPAL	1400000	103
E4	MOHIT RAMNANI	1250000	102
E5	SHAILJA SINGH	1450000	103

Table : JOB

JOBID	JOBTITLE	SALARY
101	President	200000
102	Vice President	125000
103	Administration Assistant	80000
104	Accounting Manager	70000
105	Accountant	65000
106	Sales Manager	80000

Write SQL command to change the JOBID to 104 of the Employee with ID as E4 in the table 'EMPLOYEE'.

Update employee set jobid=104 where employeeID="E4";

11. 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.

Update student set marks=marks-5 where rollnumber=2;

12. Chhavi has created a table named Orders, she has been asked to increase the value of a column named salesamount by 20. She has written the following query for the same.

Alter table Orders Add salesamount =salesamount+20;

Is it the correct query?Justify.

Update orders set salesamount=salesamount+20'

13. Consider the following table:

Table: PharmaDB

RxID	Drug ID	DrugName	Price	Pharmacy Name	PharmacyLocation
R1000	5476	Amlodipine	100.00	Rx Pharmacy	Pitampura, Delhi
R1001	2345	Paracetamol	15.00	Raj Medicos	Bahadurgarh, Haryana
R1002	1236	Nebistar	60.00	MyChemist	Rajouri Garden, Delhi
R1003	6512	VitaPlus	150.00	MyChemist	Gurgaon,Haryana
R1004	5631	Levocitrezine	110.00	RxPharmacy	South Extension,Delhi

Write commands in SQL to increase the price of "Amlodipine" by 50.

Update PharmaDB set price=price+50 where drugname="Amlodipine";

Informatics Practices
My SQL Worksheet-6
(DML - SELECT command)

1.	Pooja, a students of class XI, created a table "Book". Price is a column of this table. To find the details of books whose prices have not been entered she wrote the following query: Select * from Book where Price = NULL;																																																																
	Select * from book where price is null;																																																																
2.	<p>The LastName column of a table "Directory" is given below:</p> <table border="1" data-bbox="159 470 295 705"> <tr><td>LastName</td></tr> <tr><td>Batra</td></tr> <tr><td>Sehgal</td></tr> <tr><td>Bhatia</td></tr> <tr><td>Sharma</td></tr> <tr><td>Mehta</td></tr> </table> <p>Based on this information, find the output of the following queries: a) SELECT lastname FROM Directory WHERE lastname like "_a%"; b)SELECT lastname FROM Directory WHERE lastname not like "%a";</p>		LastName	Batra	Sehgal	Bhatia	Sharma	Mehta																																																									
LastName																																																																	
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Sehgal																																																																	
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	<p>A) <u>Lastname</u> Batra B) <u>Lastname</u> Sehgal</p>																																																																
3.	<p>Consider the table TEACHER given below. Write commands in SQL for (1) to (3) and output for (4)</p> <table border="1" data-bbox="143 952 941 1243"> <thead> <tr> <th>ID</th> <th>Name</th> <th>Department</th> <th>Hiredate</th> <th>Category</th> <th>Gender</th> <th>Salary</th> </tr> </thead> <tbody> <tr><td>1</td><td>Tanya Nanda</td><td>SocialStudies</td><td>1994-03-17</td><td>TGT</td><td>F</td><td>25000</td></tr> <tr><td>2</td><td>Saurabh Sharma</td><td>Art</td><td>1990-02-12</td><td>PRT</td><td>M</td><td>20000</td></tr> <tr><td>3</td><td>Nandita Arora</td><td>English</td><td>1980-05-16</td><td>PGT</td><td>F</td><td>30000</td></tr> <tr><td>4</td><td>James Jacob</td><td>English</td><td>1989-10-16</td><td>TGT</td><td>M</td><td>25000</td></tr> <tr><td>5</td><td>Jaspreet Kaur</td><td>Hindi</td><td>1990-08-01</td><td>PRT</td><td>F</td><td>22000</td></tr> <tr><td>6</td><td>Disha Sehgal</td><td>Math</td><td>1980-03-17</td><td>PRT</td><td>F</td><td>21000</td></tr> <tr><td>7</td><td>Siddharth Kapoor</td><td>Science</td><td>1994-09-02</td><td>TGT</td><td>M</td><td>27000</td></tr> <tr><td>8</td><td>Sonali Mukherjee</td><td>Math</td><td>1980-11-17</td><td>TGT</td><td>F</td><td>24500</td></tr> </tbody> </table> <p>i. To display all information about teachers of PGT category. ii. To list the names of female teachers of Hindi department. iii. To list names, departments and date of hiring of all the teachers in ascending order of date of joining iv. SELECT DISTINCT(category) FROM teacher;</p>		ID	Name	Department	Hiredate	Category	Gender	Salary	1	Tanya Nanda	SocialStudies	1994-03-17	TGT	F	25000	2	Saurabh Sharma	Art	1990-02-12	PRT	M	20000	3	Nandita Arora	English	1980-05-16	PGT	F	30000	4	James Jacob	English	1989-10-16	TGT	M	25000	5	Jaspreet Kaur	Hindi	1990-08-01	PRT	F	22000	6	Disha Sehgal	Math	1980-03-17	PRT	F	21000	7	Siddharth Kapoor	Science	1994-09-02	TGT	M	27000	8	Sonali Mukherjee	Math	1980-11-17	TGT	F	24500
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	<p>i. Select * from teacher where category="PGT"; ii. select name from gym where gender="F" and department="Hindi"; iii. Select name,department,hiredate from teacher order by hiredate; iv. <u>DISTINCT(Category)</u> TGT PRT PGT</p>																																																																
4.	<p>The Item_No and Cost column of a table "ITEMS" are given below:</p> <table border="1" data-bbox="159 1724 526 1971"> <thead> <tr> <th>ITEM_NO</th> <th>COST</th> </tr> </thead> <tbody> <tr><td>101</td><td>5000</td></tr> <tr><td>102</td><td>NULL</td></tr> <tr><td>103</td><td>4000</td></tr> <tr><td>104</td><td>6000</td></tr> <tr><td>105</td><td>NULL</td></tr> </tbody> </table> <p>Based on this information, find the output of the following queries: a) SELECT COST +100 FROM ITEMS WHERE ITEM_NO > 103; Ans. <u>COST+100</u> 6100 NULL</p>		ITEM_NO	COST	101	5000	102	NULL	103	4000	104	6000	105	NULL																																																			
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5.	<p>Consider the table Projects given below. Write commands in SOL for i) to iii) and output for iv)</p>																																																																

PROJECTS

ID	ProjName	ProjSize	StartDate	EndDate	Cost
1	Payroll-MMS	Medium	2006-03-17	2006-09-16	60000
2	Payroll-ITC	Large	2008-02-12	2008-01-11	500000
3	IDMgmt-LITL	Large	2008-06-13	2009-05-21	300000
4	Recruit-LITL	Medium	2008-03-18	2008-06-01	50000
5	IDMgmt-MTC	Small	2007-01-15	2007-01-29	20000
6	Recruit-ITC	Medium	2007-03-01	2007-06-28	50000

- To display all information about projects of "Medium" ProjSize
- To list the ProjSize of projects whose ProjName ends with LITL.
- To list ID, Name, Size, and Cost of all the projects in descending order of StartDate.
- SELECT DISTINCT ProjSize FROM projects

- Select * from projects where projsize="Medium";
- Select projsize from projects where projname like "%LITL";
- Select ID,projName,projSize,cost from projects order by startDate desc;
- ProjSize
Medium
Large
Small

6. The Mname Column of a table Members is given below :

Mname
Aakash
Hirav
Vinayak
Sheetal
Rajeev

Based on the information, find the output of the following queries :

- Select Mname from members where mname like "%v" ;
- Select Mname from members where mname like "%e%";

- Ans. i) Mname
Hirav
Rajeev**
- ii) Mname
Sheetal
Rajeev**

7. Sarthya, a student of class XI, created a table "RESULT". Grade is one of the column of this table. To find the details of students whose Grades have not been entered, he wrote the following MySql query, which did not give the desired result.
SELECT * FROM Result WHERE Grade= "Null";
Help Sarthya to run the query by removing the errors from the query and write the correct Query.

Select * from Result where Grade is null;

8. Consider the table RESULT given below. Write commands in MySql for (i) to (ii)

Table : Result

No	Name	Stipend	Subject	Average	Division
1	Sharon	400	English	38	THIRD
2	Amal	680	Mathematics	72	FIRST
3	Vedant	500	Accounts	67	FIRST
4	Shakeer	200	Informatics	55	SECOND
5	Anandha	400	History	85	FIRST
6	Upasna	550	Geography	45	THIRD

- To list the names of those students, who have obtained Division as FIRST in the ascending order of NAME.
- To display a report listing NAME, SUBJECT and Annual stipend received assuming that the stipend column has monthly stipend.

- Select name from Result where division="First" order by name;
- Select name,subject,stipend*12 from Result;

9. Mr. Janak is using a table with following columns :

Name , Class , Course_Id, Course_name

He needs to display names of students, who have not been assigned any stream or have been assigned Course_name that ends with "economics". He wrote the following command, which did not give the desired result.

SELECT Name, Class FROM Students WHERE Course name = NULL OR Course name="%economics";

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

SELECT Name, Class FROM Students WHERE Course name IS NULL OR Course

	name LIKE "%economics";																																																								
10	<p>Consider the Table SHOPPE given below. Write command in MySql for (i) to (ii)</p> <p>Table SHOPPE :</p> <table border="1"> <thead> <tr> <th>Code</th> <th>Item</th> <th>Company</th> <th>Qty</th> <th>City</th> <th>Price</th> </tr> </thead> <tbody> <tr> <td>102</td> <td>Biscuit</td> <td>Hide & Seek</td> <td>100</td> <td>Delhi</td> <td>10.00</td> </tr> <tr> <td>103</td> <td>Jam</td> <td>Kissan</td> <td>110</td> <td>Kolkata</td> <td>25.00</td> </tr> <tr> <td>101</td> <td>Coffee</td> <td>Nestle</td> <td>200</td> <td>Kolkata</td> <td>55.00</td> </tr> <tr> <td>106</td> <td>Sauce</td> <td>Maggi</td> <td>90</td> <td>Mumbai</td> <td>55.00</td> </tr> <tr> <td>107</td> <td>Cake</td> <td>Britannia</td> <td>72</td> <td>Delhi</td> <td>10.00</td> </tr> <tr> <td>104</td> <td>Maggi</td> <td>Nestle</td> <td>150</td> <td>Mumbai</td> <td>10.00</td> </tr> <tr> <td>105</td> <td>Chocolate</td> <td>Cadbury</td> <td>170</td> <td>Delhi</td> <td>25.00</td> </tr> </tbody> </table> <p>(i) To display names of the items whose name starts with 'C' in ascending order of Price. (ii) To display Code, Item name and City of the products whose quantity is less than 100.</p> <p>i) Select Item from shoppe where item like "C%" order by price; ii) Select code,item,city from shoppe where qty<100;</p>	Code	Item	Company	Qty	City	Price	102	Biscuit	Hide & Seek	100	Delhi	10.00	103	Jam	Kissan	110	Kolkata	25.00	101	Coffee	Nestle	200	Kolkata	55.00	106	Sauce	Maggi	90	Mumbai	55.00	107	Cake	Britannia	72	Delhi	10.00	104	Maggi	Nestle	150	Mumbai	10.00	105	Chocolate	Cadbury	170	Delhi	25.00								
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11	<p>What is used in the SELECT clause to return all the columns in the table?</p> <p>* (asterisk) sign</p>																																																								
12	<p>In MySQL, Sumit and Fauzia are getting the following outputs of ItemCodes for SELECT statements used by them on a table named ITEM.(Both have used the SELECT statements on the same table ITEM).</p> <p>Sumit's Output</p> <table border="1"> <tr><td>101</td></tr> <tr><td>102</td></tr> <tr><td>101</td></tr> <tr><td>105</td></tr> <tr><td>101</td></tr> <tr><td>107</td></tr> </table> <p>Fauzia's Output</p> <table border="1"> <tr><td>101</td></tr> <tr><td>102</td></tr> <tr><td>105</td></tr> <tr><td>107</td></tr> </table> <p>Which extra keyword has Fauzia used with SELECT statement to get the above output?</p> <p>Distinct</p>	101	102	101	105	101	107	101	102	105	107																																														
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13	<p>Consider the table 'PERSONS' given below. Write commands in SQL for (i) to (iv) and write output for (v).</p> <p>(c) Consider the table PERSONS given below. write commands in SQL for (i) to (iv) and write output for (v) to (viii).</p> <p>Table : PERSONS</p> <table border="1"> <thead> <tr> <th>PId</th> <th>Surname</th> <th>Firstname</th> <th>Gender</th> <th>City</th> <th>PinCode</th> <th>BasicSalary</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Sharma</td> <td>Geeta</td> <td>F</td> <td>Udhamwara</td> <td>182141</td> <td>50000</td> </tr> <tr> <td>2</td> <td>Singh</td> <td>Surinder</td> <td>M</td> <td>Kupwara Nagar</td> <td>193222</td> <td>75000</td> </tr> <tr> <td>3</td> <td>Jacob</td> <td>Peter</td> <td>M</td> <td>Bhawani</td> <td>185155</td> <td>45000</td> </tr> <tr> <td>4</td> <td>Alvis</td> <td>Thomas</td> <td>M</td> <td>Ahmed Nagar</td> <td>380025</td> <td>50000</td> </tr> <tr> <td>5</td> <td>Mohan</td> <td>Garima</td> <td>M</td> <td>Nagar Coolangatta</td> <td>390026</td> <td>33000</td> </tr> <tr> <td>6</td> <td>Azmi</td> <td>Simi</td> <td>F</td> <td>New Delhi</td> <td>110021</td> <td>40000</td> </tr> <tr> <td>7</td> <td>Kaur</td> <td>Manpreet</td> <td>F</td> <td>Udhamwara</td> <td>182141</td> <td>42000</td> </tr> </tbody> </table> <p>(i) Display the SurNames, FirstNames and Cities of people residing in Udhamwara city. (ii) Display the Person Ids (PID), cities and Pincodes of persons in descending order of Pincodes. (iii) Display the First Names and cities of all the females getting Basic salaries above 40000. (iv) Display First Names and Basic Salaries of all the persons whose firstnames starts with "G".</p> <p>(v) SELECT Surname FROM Persons Where BasicSalary >= 50000;</p>	PId	Surname	Firstname	Gender	City	PinCode	BasicSalary	1	Sharma	Geeta	F	Udhamwara	182141	50000	2	Singh	Surinder	M	Kupwara Nagar	193222	75000	3	Jacob	Peter	M	Bhawani	185155	45000	4	Alvis	Thomas	M	Ahmed Nagar	380025	50000	5	Mohan	Garima	M	Nagar Coolangatta	390026	33000	6	Azmi	Simi	F	New Delhi	110021	40000	7	Kaur	Manpreet	F	Udhamwara	182141	42000
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	<p>i) Select surname,firstname,city from persons where city="Udhamwara"; ii) Select pid,city,pincode from persons order by pincode desc; iii) Select firstname,city from persons where gender="F" and basicSalary>40000;4 iv) Select firstname,basicSalary from persons where firstname like "G%"; v) <u>Surname</u> Sharma Singh Alvis</p>																																																								
14	<p>Mr. Tondon is using table EMP with the following columns. ECODE,DEPT,ENAME,SALARY He wants to display all information of employees (from EMP table) in ascending order of ENAME and within it in ascending order of DEPT. He wrote the following command, which did not show the desired output. SELECT * FROM EMP ORDER BY NAME DESC,DEPT;</p>																																																								

	Rewrite the above query to get the desired output.																																								
	SELECT * FROM EMP ORDER BY ENAME,DEPT;																																								
15	<p>Consider the following table named "GYM" with details about fitness items being sold in the store. Write command of SQL for (i) to (ii).</p> <p>Table GYM:</p> <table border="1"> <thead> <tr> <th>ICODE</th> <th>INAME</th> <th>PRICE</th> <th>BRANDNAME</th> </tr> </thead> <tbody> <tr> <td>G101</td> <td>Power Fit Exerciser</td> <td>20000</td> <td>Power Gynea</td> </tr> <tr> <td>G102</td> <td>Aquafit Hand Grip</td> <td>1800</td> <td>Reliable</td> </tr> <tr> <td>G103</td> <td>Cycle Bike</td> <td>14000</td> <td>Ecobike</td> </tr> </tbody> </table> <p>(i) To display the names of all the items whose name starts with "A". (ii) To display ICODEs and INAMEs of all items, whose Brandname is Reliable or Coscore.</p> <p>i) Select iname from gym where iname like "A%"; ii) Select ICode,Iname from gym where brandname in("Reliable", "Coscore");</p>	ICODE	INAME	PRICE	BRANDNAME	G101	Power Fit Exerciser	20000	Power Gynea	G102	Aquafit Hand Grip	1800	Reliable	G103	Cycle Bike	14000	Ecobike																								
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16	<p>Consider the following table named 'SBOP" with details of account holders. Write commands of MySql for (i) to (ii) and output for (iii).</p> <p>Table : SBOP</p> <table border="1"> <thead> <tr> <th>Accountno</th> <th>Name</th> <th>Balance</th> <th>DateOfopen</th> <th>Transaction</th> </tr> </thead> <tbody> <tr> <td>SB-1</td> <td>Mr. Anil</td> <td>15000.00</td> <td>2011-02-24</td> <td>7</td> </tr> <tr> <td>SB-2</td> <td>Mr. Amit</td> <td>23567.89</td> <td></td> <td>8</td> </tr> <tr> <td>SB-3</td> <td>Mrs. Sakehi</td> <td>45000.00</td> <td>2012-02-04</td> <td>5</td> </tr> <tr> <td>SB-4</td> <td>Mr. Gopal</td> <td>23812.35</td> <td>2013-09-22</td> <td></td> </tr> <tr> <td>SB-5</td> <td>Mr. Dennis</td> <td>63459.80</td> <td>2009-11-10</td> <td>15</td> </tr> </tbody> </table> <p>(i) To display Accountno, Name and DateOfopen of account holders having transactions more than 8. (ii) To display all information of account holders whose transaction value is not mentioned. (iii) SELECT NAME,BALANCE FROM SBOP WHERE NAME LIKE "%i";</p> <p>i) Select AccountNo,Name,Dateofopen from sbop where transaction>8; ii) Select * from sbop where transaction is null; iii) Name Balance Mrs. Sakshi 45000.00</p>	Accountno	Name	Balance	DateOfopen	Transaction	SB-1	Mr. Anil	15000.00	2011-02-24	7	SB-2	Mr. Amit	23567.89		8	SB-3	Mrs. Sakehi	45000.00	2012-02-04	5	SB-4	Mr. Gopal	23812.35	2013-09-22		SB-5	Mr. Dennis	63459.80	2009-11-10	15										
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SB-5	Mr. Dennis	63459.80	2009-11-10	15																																					
17	When using the LIKE clause, which wildcard symbol represents any sequence of none, one or more characters ?																																								
	%																																								
18	<p>Consider the table FLIGHT given below. Write commands in SQL for (i) to (iv) and output for (v).</p> <p>Table : FLIGHT</p> <table border="1"> <thead> <tr> <th>FLCODE</th> <th>START</th> <th>DESTINATION</th> <th>NO_STOPS</th> <th>NO_FLIGHTS</th> </tr> </thead> <tbody> <tr> <td>IC101</td> <td>DELHI</td> <td>AGARTALA</td> <td>1</td> <td>5</td> </tr> <tr> <td>IC102</td> <td>MUMBAI</td> <td>SIKKIM</td> <td>1</td> <td>3</td> </tr> <tr> <td>IC103</td> <td>DELHI</td> <td>JAIPUR</td> <td>0</td> <td>7</td> </tr> <tr> <td>IC105</td> <td>KANPUR</td> <td>CHENNAI</td> <td>2</td> <td>2</td> </tr> <tr> <td>IC107</td> <td>MUMBAI</td> <td>KANPUR</td> <td>0</td> <td>4</td> </tr> <tr> <td>IC431</td> <td>INDORE</td> <td>CHENNAI</td> <td>3</td> <td>2</td> </tr> <tr> <td>IC121</td> <td>DELHI</td> <td>AHMEDABAD</td> <td>2</td> <td>6</td> </tr> </tbody> </table> <p>(i) Display details of all flights starting from Delhi. (ii) Display details of flights that have more than 4 number of flights operating. (iii) Display flight codes, starting place, destination, number of flights in descending order of number of flights. (iv) Display destinations along with flight codes of all the destinations starting with 'A'. (v) SELECT DISTINCT(NO_STOPS) FROM FLIGHT;</p> <p>i) Select * from flight where start="Delhi"; ii) Select * from flight where no_flights>4; iii) Select fcode,start,destination,no_flights from flight order by no_flights desc; iv) Select destination,fcode from flight where destination like "A%"; v) NO_STOPS 0 1 2 3</p>	FLCODE	START	DESTINATION	NO_STOPS	NO_FLIGHTS	IC101	DELHI	AGARTALA	1	5	IC102	MUMBAI	SIKKIM	1	3	IC103	DELHI	JAIPUR	0	7	IC105	KANPUR	CHENNAI	2	2	IC107	MUMBAI	KANPUR	0	4	IC431	INDORE	CHENNAI	3	2	IC121	DELHI	AHMEDABAD	2	6
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IC105	KANPUR	CHENNAI	2	2																																					
IC107	MUMBAI	KANPUR	0	4																																					
IC431	INDORE	CHENNAI	3	2																																					
IC121	DELHI	AHMEDABAD	2	6																																					
19	<p>What will be the output of the following queries on the basis of Employee table:</p> <pre>+-----+-----+-----+ EmpId EName Salary +-----+-----+-----+</pre> <p>(i) Select Salary+100 from Employee where EmpId='A002';</p> <pre>+-----+-----+-----+ A001 Bob 5600 A002 John NULL +-----+-----+-----+</pre>																																								

**i) Salary +100
NULL**

20 Pranay, who is an Indian, created a table named "Friends" to store his friend's detail.

S_No	Name	Age	City	Country	Email_id
1	Alice	14	Washington	USA	alice@gmail.com
2	Charles	12	Copenhagen	Denmark	charles@yahoo.com
3	Angel	16	Chicago	USA	angel@gmail.com
4	Jasmine	15	Sydney	Australia	jasmine@yahoo.com
5	Raj	14	New Delhi	India	raj@gmail.com
6	Jette	13	Nykobing	Denmark	jette@gmail.com
7	Alexander	15	Melbourne	Australia	NULL
8	Shashank	16	Banglore	India	NULL

Table "Friends" is shown below. Write commands in SQL for (i) to (iii) and output for (iv).

i. To display list of all foreigner friends.
 ii. To list name, city and country in descending order of age.
 iii. To list name and city of those friends who don't have an email id.
 iv. Select name, country from friends where age > 12 and name like 'A%';

i. Select * from friends where country not in("India");
ii. Select name,city,country from friends order by age desc;
iii. Select name,city from friends where email_id is null;
iv. Name Country
Alice USA
Angel USA
Alexander Australia

21 Consider the following table named "GARMENT". Write command of SQL for (i) to (iv) and output for (v) to (vii).

Table : GARMENT

GCODE	GNAME	SIZE	COLOUR	PRICE
111	TShirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Top	L	Pink	1200.00

(i) To display names of those garments that are available in 'XL' size.
 (ii) To display codes and names of those garments that have their names starting with 'Ladies'.
 (iii) To display garment names, codes and prices of those garments that have price in the range 1000.00 to 1500.00 (both 1000.00 and 1500.00 included).
 (iv) SELECT GNAME FROM GARMENT WHERE SIZE IN ('M', 'L') AND PRICE > 1500;

i) Select gname from garment where size="XL";
ii) Select gcode,gname from garment where gname like "Ladies%";
iii) Select gname,gcode,price where price between 1000.00 and 1500.00
iv) Jeans
Gname

22 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;

SELECT ID, Salary FROM empsalary WHERE Salary is not null;

23 Consider the table '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
Bengaluru

Select distinct Location from employee;

24 Table "Emp" is shown below. Write commands in SQL for (i) to (iii) and output for (iv) and (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 list names and addresses of those persons who have 'Delhi' in their address.
- iv. SELECT Name, Salary FROM Emp where salary between 50000 and 70000;
- v. SELECT Name, phone from emp where

phone like '99%';

- i. Select * from emp where age<25;**
- ii. Select name,salary from emp order by salary desc;**
- iii. Select name,address where address like "%Delhi%";**
- iv. Name salary
Siddharth 62000
Karan 65000**
- v. Name Phone
Chavi 99113423989
Raunaq 99101393576**

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

Scode	Name	City
101	Aakriti	Mumbai
102	Aman	Chennai
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.

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

26 Write commands in SQL for (i) to (iii) and output for (iv).

Table : Store

StoreId	Name	Location	City	NoOfEmployee	DateOpene	SalesAmou
S101	Planetfashio	KarolBagh	Delhi	7	2015-10-16	300000
S102	Trends	Nehru Nagar	Mumbai	11	2015-08-09	400000
S103	Vogue	Vikas Vihar	Delhi	10	2015-06-27	200000
S104	Superfashio n	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.
- (ii) To display names of stores along with SalesAmount of those stores that have 'fashion' anywhere in their store names.
- (iii) To display Stores names, Location and Date Opened of stores that were opened before 1st March, 2015.
- (iv) SELECT distinct city FROM store;

i) Select name,location,city,salesamount from Store order by salesamount desc;

	<p>ii) Select name,salesamount from store where name like “%Fashion%”; iii) Select name,location,dateOpened from store where dateOpened<”2015-03-01”; iv) CITY Delhi Mumbai</p>																																				
27	<p>Which clause would you use with Select to achieve the following: i.To select the values that match with any value in a list of specified values. ii.Used to display unrepeated values of a column from a table.</p>																																				
	<p>i. IN ii. DISTINCT</p>																																				
28	<p>Consider the following table: Table: PharmaDB</p> <table border="1"> <thead> <tr> <th>RxID</th> <th>Drug ID</th> <th>DrugName</th> <th>Price</th> <th>Pharmacy Name</th> <th>PharmacyLocation</th> </tr> </thead> <tbody> <tr> <td>R1000</td> <td>5476</td> <td>Amlodipine</td> <td>100.00</td> <td>Rx Pharmacy</td> <td>Pitampura, Delhi</td> </tr> <tr> <td>R1001</td> <td>2345</td> <td>Paracetamol</td> <td>15.00</td> <td>Raj Medicos</td> <td>Bahadurgarh, Haryana</td> </tr> <tr> <td>R1002</td> <td>1236</td> <td>Nebistar</td> <td>60.00</td> <td>MyChemist</td> <td>Rajouri Garden, Delhi</td> </tr> <tr> <td>R1003</td> <td>6512</td> <td>VitaPlus</td> <td>150.00</td> <td>MyChemist</td> <td>Gurgaon,Haryana</td> </tr> <tr> <td>R1004</td> <td>5631</td> <td>Levocitrezine</td> <td>110.00</td> <td>RxPharmacy</td> <td>South Extension,Delhi</td> </tr> </tbody> </table> <p>Write commands in SQL for (i) to (iii) and output for (iv): i. To increase the price of “Amlodipine” by 50. ii. To display all those medicines whose price is in the range 100 to 150. iii. To display the Drug ID, DrugName and Pharmacy Name of all the records in descending order of their price. iv. SELECT RxID, DrugName, Price from PharmaDB where PharmacyName IN (“Rx Pharmacy”, “Raj Medicos”);</p>	RxID	Drug ID	DrugName	Price	Pharmacy Name	PharmacyLocation	R1000	5476	Amlodipine	100.00	Rx Pharmacy	Pitampura, Delhi	R1001	2345	Paracetamol	15.00	Raj Medicos	Bahadurgarh, Haryana	R1002	1236	Nebistar	60.00	MyChemist	Rajouri Garden, Delhi	R1003	6512	VitaPlus	150.00	MyChemist	Gurgaon,Haryana	R1004	5631	Levocitrezine	110.00	RxPharmacy	South Extension,Delhi
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	<p>i. Update PharmaDB set price=price+50 where drugname=“Amlodipine”; ii. Select * from pharamdb where price between 100 and 150; iii. Select DrugID,Drugname,pharmacyName from pharmaDB order by price desc; iv.</p> <table border="1"> <thead> <tr> <th>RXID</th> <th>DrugName</th> <th>price</th> </tr> </thead> <tbody> <tr> <td>R1000</td> <td>Amlodipine</td> <td>100.00</td> </tr> <tr> <td>R1001</td> <td>Paracetamol</td> <td>15.00</td> </tr> <tr> <td>R1004</td> <td>Levocitrezine</td> <td>110.00</td> </tr> </tbody> </table>	RXID	DrugName	price	R1000	Amlodipine	100.00	R1001	Paracetamol	15.00	R1004	Levocitrezine	110.00																								
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29	<p>Write SQL statement that gives the same SQL output as the following SQL statement but uses ‘IN’ keyword. SELECT NAME FROM STUDENT WHERE STATE = ‘VA’ ;</p>																																				
	<p>SELECT NAME FROM STUDENT WHERE STATE IN(‘VA’);</p>																																				
30	<p>Which one of the following SQL queries will display all Employee records containing the word “Amit”, regardless of case (whether it was stored as AMIT, Amit, or amit etc.) ? (i) SELECT * from Employees WHERE EmpName like UPPER ‘%AMIT%’; (ii) SELECT *from Employees WHERE EmpName like ‘%AMIT%’ or ‘%AMIT%’ OR ‘%amit%’; (iii) SELECT * from Employees WHERE UPPER (EmpName) like ‘%AMIT%’;</p>																																				
	<p>(iii) SELECT * from Employees WHERE UPPER (EmpName) like ‘%AMIT%’;</p>																																				
31	<p>Write Answer to (i). Write SQL queries for (ii) to (vii). (Table : Salesperson)</p> <table border="1"> <thead> <tr> <th>SID</th> <th>Name</th> <th>Phone</th> <th>DOB</th> <th>Salary</th> <th>Area</th> </tr> </thead> <tbody> <tr> <td>S101</td> <td>Amit Kumar</td> <td>98101789654</td> <td>1967-01-23</td> <td>67000.00</td> <td>North</td> </tr> <tr> <td>S102</td> <td>Deepika Sharma</td> <td>99104567834</td> <td>1992-09-23</td> <td>32000.00</td> <td>South</td> </tr> <tr> <td>S103</td> <td>Vinay Srivastav</td> <td>98101546789</td> <td>1991-06-27</td> <td>35000.00</td> <td>North</td> </tr> <tr> <td>S104</td> <td>Kumar Mehta</td> <td>88675345789</td> <td>1967-10-16</td> <td>40000.00</td> <td>East</td> </tr> <tr> <td>S105</td> <td>Rashmi Kumar</td> <td>98101567434</td> <td>1972-09-20</td> <td>50000.00</td> <td>South</td> </tr> </tbody> </table>	SID	Name	Phone	DOB	Salary	Area	S101	Amit Kumar	98101789654	1967-01-23	67000.00	North	S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South	S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North	S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East	S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South
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S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South																																

Note : Columns SID and DOB contain Sales Person Id and Data of Birth respectively.

(i) Write the data types of SID and DOB columns.

(ii) Display names of Salespersons and their Salaries who have salaries in the range 30000.00 to 40000.00

(iii) To list Names, Phone numbers and DOB (Date of Birth) of Salespersons who were born before 1st November, 1992.

(iv) To display Names and Salaries of Salespersons in descending order of salary.

(v) To display areas in which Salespersons are working. Duplicate Areas should not be displayed.

(vi) To display SID, Names along with Salaries increased by 500. (Increase of 500 is only to be displayed and not to be updated in the table)

(vii) To display Names of Salespersons who have the word 'Kumar' anywhere in their names.

- i. The data type of SID is either char or varchar**
- ii. Select name,salary from salesperson where salary between 30000.00 and 40000.00;**
- iii. Select name,phone,dob from salesperson where dob<"1992-11-01";**
- iv. Select name,salary from salesperson order by salary desc;**
- v. Select distinct area from salesperson;**
- vi. Select sid,name,salary+500 from salesperson;**
- vii. Select name from salesperson where name like "%Kumar%";**

32 Write the following statement using 'OR' logical operator :
 SELECT first_name, last_name, subject FROM studentdetails WHERE subject IN ('Maths', 'Science');

Select first_name, last_name, subject from studentDetails Where subject="Maths" or subject="Science";

33 Consider the Table "Gym" shown below. Write commands in SQL for (i) to (vi) :

Table : Gym

Mcode	Mname	Gender	Age	FeeGiven	Type	DtAdmit
1	Amit	Male	35	6000	Monthly	2016-01-23
2	Rashmi	Female	25	8000	Monthly	2016-09-23
3	George	Male	42	24000	Yearly	2011-06-27
4	Fawad	Male	27	12000	Quarterly	2012-10-16
5	Samit	Male	54	6000	Monthly	2015-09-20
6	Lakshmi	Female	43	4500	Monthly	2016-01-15
7	Samita	Female	22	500	Guest	2017-01-23
8	Michael	Male	51	24000	Yearly	2013-07-18
9	DayaChand	Male	44	100000	Life	2012-09-08
10	Ajit	Male	33	12000	Quarterly	2015-06-26

- (i) To display Mname, Age, FeeGiven of those members whose fee is above 12,000.
- (ii) To display Mcode, Mname, Age of all female members of the Gym with age in descending order.
- (iii) To list names of members and their date of admission of those members who joined after 31st December, 2015.
- (iv) To display the Mname, FeeGiven of all those members of the Gym whose age is less than 40 and are monthly type members of the Gym.
- (v) To display names of members who have 'mit' anywhere in their names. For example : Amit, Samit.
- (vi) To display types of memberships available. Duplicate values should not be displayed.

- i) Select mname, age, feegiven from gym where feegiven>12000;**
- ii) Select mcode,mname,age from gym where gender="Female" order by age desc;**
- iii) Select mname,dtAdmit from gym where dtAdmit>"2015-12-31";**
- iv) Select mname,feegiven from gym where age<40 and type="Monthly";**
- v) Select mname from gym where mname like "%mit%";**
- vi) Select distinct type from gym;**

34

Consider the following table:

Student

Admn	Name	Stream	Optional	Average
1001	Shrishti	Science	CS	90
1002	Ashi	Humanities	Maths	80
1003	Aditya	Commerce	IP	60
1004	Ritu Raj	Science	IP	65
1005	Sonali	Commerce	Maths	60
1006	Saumya	Science	IP	65
1007	Ashutosh	Science	IP	95
1008	Prashant	Commerce	P.ED	80
1009	Aman	Commerce	IP	70
1010	Rishabh	Humanities	P.ED	85

Write commands in SQL for (i) to (iv) and output for (v):

- i. To display the details of all those students who have IP as their optional subject.
- ii. To display name, stream and optional of all those students whose name starts with 'A'.
- iii. To give an increase of 3 in the average of all those students of humanities section who have Maths as their optional subject.
- iv. To display a name list of all those students who have average more than 75.

v. Select name from students where optional IN ('CS','IP');

i. Select * from student where optional="IP";

ii. Select name,stream,optional from student where name like "A%";

iii. Update student set average=average+3 where stream="Humanities";

iv. Select name from student where average>75;

**v. Name
Shrishti
Aditya
Ritu Raj
Saumya
Ashutosh
Aman**

Informatics Practices
My SQL Worksheet-7
(Single Row Functions)

- Write the output of the following SQL queries:
 a) SELECT ROUND(6.5675, 2); **6.57**
 b) SELECT TRUNCATE(5.3456, 1); **5.3**
 c) SELECT DAYOFMONTH('2009-08-25'); **25**
 d) SELECT MID('Class 12', 2,3); **las**
- Write the output of the following SQL queries :
 (i) SELECT INSTR('UNICODE','CO'); **4**
 (ii) SELECT RIGHT('Informatics',3); **ics**
- State difference between date functions NOW() and SYSDATE() of MySql.

Now()	Sysdate()
Now displays the date and time at the beginning of the command.	Sysdate() displays the date and time at the exact time of the execution of the command.
It always displays the same date and time in a single sql command. No matter how many times it is being executed.	It displays the exact date and time at which it is executed within the single command.
Example:	
<pre>mysql> select sysdate(),sleep(5),sysdate(),now(); +-----+-----+-----+-----+ sysdate() sleep(5) sysdate() now() +-----+-----+-----+-----+ 2018-01-26 13:38:28 0 2018-01-26 13:38:33 2018-01-26 13:38:28 +-----+-----+-----+-----+ 1 row in set (5.00 sec)</pre>	

- Name a function of MySql which is used to remove trailing and leading spaces from a string.

trim

- Consider the following table named 'SBOP' with details of account holders. Write output
 Table : SBOP

Accountno	Name	Balance	DateOfopen	Transaction
SB-1	Mr. Anil	15000.00	2011-02-24	7
SB-2	Mr. Amit	23567.89		8

 (i) SELECT ROUND(Balance,-3) FROM SBOP WHERE AccountNo="SB-5";
 Ans. i)
ROUND(Balance,-3)
63000

- Write the output of the following SQL queries :
 (i) SELECT RIGHT('software', 2); **re**
 (ii) SELECT INSTR('twelve','lv'); **4**
 (iii) SELECT DAYOFMONTH('2014-03-10'); **1**
 (iv) SELECT ROUND(76.987, 2); **76.99**

- Write the output of the following SQL queries:
 i. SELECT INSTR('INTERNATIONAL', 'NA'); **6**
 ii. SELECT LENGTH(CONCAT('NETWORK','ING')); **10**
 iii. SELECT ROUND(563.345,-2); **600**
 iv. SELECT DAYOFYEAR('2014-01-30'); **30**

- Pranay, who is an Indian, created a table named "Friends" to store his friend's detail. Table "Friends" is shown below. Write output for (i) and (ii).

S_No	Name	Age	City	Country	Email_id
1	Alice	14	Washington	USA	alice@gmail.com
2	Charles	12	Copenhagen	Denmark	charles@yahoo.com
3	Angel	16	Chicago	USA	angel@gmail.com

S_No	Name	Age	City	Country	Email_id
1	Alice	14	Washington	USA	alice@gmail.com
2	Charles	12	Copenhagen	Denmark	charles@yahoo.com
3	Angel	16	Chicago	USA	angel@gmail.com
4	Jasmine	15	Sydney	Australia	jasmine@yahoo.com
5	Raj	14	New Delhi	India	raj@gmail.com
6	Jette	13	Nykobing	Denmark	jette@gmail.com
7	Alexander	15	Melbourne	Australia	NULL
8	Shashank	16	Banglore	India	NULL

- i. Select `ucase(concat(name,"*",city))` from friends where country like 'Denmark';
ii. Select `mid(name,1,4)` as "UID" from friends where country like 'USA';

i. **CHARLES*COPENHAGEN**
JETTE*NYKOBING

ii. **Alic**
Ange

ucase(concat(name,"*",city))
UID

9. Write the output of the following SQL queries:
i) `SELECT TRUNCATE(8.975,2);` **8.97**
ii) `SELECT MID('HONESTY WINS',3,4);` **NEST**
iii) `SELECT RIGHT(CONCAT('PRACTICES','INFORMATICS'),5);` **ATICS**
iv) `SELECT DAYOFMONTH('2015-01-16');` **16**

10. Write the output of the following SQL queries :
(i) `SELECT MID('BoardExamination',2,4);` **oard**
(ii) `SELECT ROUND(67.246,2);` **67.25**
(iii) `SELECT INSTR('INFORMATION FORM','FOR');` **3**
(iv) `SELECT DAYOFYEAR('2015-01-10');` **10**

11. Write output.
- Table : Store
- | StoreId | Name | Location | City | NoOfEmplove | DateOpen | SalesAmou |
|---------|--------------|----------------|---------|-------------|------------|-----------|
| S101 | Planetfashi | KarolBag | Delhi | 7 | 2015-10- | 300000 |
| S102 | Trends | Nehru Nagar | Mumb ai | 1 | 2015-08-09 | 400000 |
| S103 | Vogue | Vikas Vihar | Delhi | 10 | 2015-06-27 | 200000 |
| S104 | Superfashion | Defence Colony | Delhi | 8 | 2015-02-18 | 450000 |
| S105 | Rage | Bandra | Mumb | 5 | 2015-09- | 600000 |

(i) `SELECT Name, length (name), left (name, 3) FROM Store where NoOfEmployees<3;`

i) Empty Set

12. Write the output of the following SQL queries:
`SELECT POW(INSTR('My_Database','_'),2);` **9**

13. Consider the table given below :
Write output.
- (Table : Salesperson)
- | SID | Name | Phone | DOB | Salary | Area |
|------|-----------------|-------------|------------|----------|-------|
| S101 | Amit Kumar | 98101789654 | 1967-01-23 | 67000.00 | North |
| S102 | Deepika Sharma | 99104567834 | 1992-09-23 | 32000.00 | South |
| S103 | Vinay Srivastav | 98101546789 | 1991-06-27 | 35000.00 | North |
| S104 | Kumar Mehta | 88675345789 | 1967-10-16 | 40000.00 | East |
| S105 | Rashmi Kumar | 98101567434 | 1972-09-20 | 50000.00 | South |
- (i) `SELECT Name, LENGTH(Name) FROM Salesperson;`
- Ans.**
- | Name | Length() |
|-----------------|----------|
| Amit Kumar | 10 |
| Deepika Sharma | 14 |
| Vinay Srivastav | 15 |
| Kumar Mehta | 11 |
| Rashmi Kumar | 12 |

14. Identify Single Row functions of MySQL amongst the following :
`TRIM()`, `MAX()`, `COUNT(*)`, `ROUND()`

Trim() and Round() are single row functions

15. Consider the Table "Gym" and write output
- Table : Gym
- | Mcode | Mname | Gender | Age | FeeGiven | Type | DtAdmit |
|-------|--------|--------|-----|----------|-----------|------------|
| 1 | Amit | Male | 35 | 6000 | Monthly | 2016-01-23 |
| 2 | Rashmi | Female | 25 | 8000 | Monthly | 2016-09-23 |
| 3 | George | Male | 42 | 24000 | Yearly | 2011-06-27 |
| 4 | Fawad | Male | 27 | 12000 | Quarterly | 2012-10-16 |
- (i) `SELECT MID(Mname,1,2)from Gym;`

Ans.

6	Lakshmi	Female	43	4500	Monthly	2016-01-15
7	Samita	Female	22	500	Guest	2017-01-23
8	Michael	Male	51	24000	Yearly	2013-07-18
MID(Mname,1,2)			44	100000	Life	2012-09-08
Ajit	Male		33	12000	Quarterly	2015-06-26

File_No	Cust_Name	PhoneNo	Loan_Amt	Bank	Cheque_Dt
619095	Ms. Roshni	9899965430	809876	HBDC Ltd.	2017-06-15
234252	Mr. Rajesh	8654327890	745738	ICUCI Ltd.	2017-07-22
543613	Mrs. Sapna	8883546354	NULL	NBI Ltd.S	2017-07-24
435467	Mr. Navneet	9764747474	647484	ICUCI Ltd.	2017-08-13
263427	Ms. Puja	8746454742	546373	HBDC Ltd.	2017-08-30

16. Observe the given table named "Loan" carefully and predict the output of the following queries:

- i. SELECT concat(left(file_no,2), right(cust_name,2)) AS "ID" from loan where Bank='ICUCI Ltd.';
- ii. select round(loan_amt-loan_amt*10/100) As "Discounted Payment" from loan where loan_amt>700000;

i) **ID**

43et

ii) **Discounted Payment**

728888

671164

23mi

Informatics Practices
My SQL Worksheet-8
(Aggregate Functions)

1. Consider the table TEACHER given below. Write commands in SQL for (1) and output for (2) to (5)

ID	Name	Department	Hiredate	Category	Gender	Salary
1	Tanya Nanda	SocialStudies	1994-03-17	TGT	F	25000
2	Saurabh Sharma	Art	1990-02-12	PRT	M	20000
3	Nandita Arora	English	1980-05-16	PGT	F	30000
4	James Jacob	English	1989-10-16	TGT	M	25000
5	Jaspreet Kaur	Hindi	1990-08-01	PRT	F	22000
6	Disha Sehgal	Math	1980-03-17	PRT	F	21000
7	Siddharth Kapoor	Science	1994-09-02	TGT	M	27000
8	Sonali Mukherjee	Math	1980-11-17	TGT	F	24500

- i. To count the number of teachers in English department.
- ii. SELECT MAX(Hiredate) FROM Teacher;
- iii. SELECT DISTINCT(category) FROM teacher;
- iv. SELECT COUNT(*) FROM TEACHER WHERE Category = "PGT"
- v. SELECT Gender,AVG(Salary) FROM TEACHER group by Gender;

i. Select count(*) from teacher where department="English";

ii. Max(Hiredate)

1994-09-02

iii. Distinct(Category)

TGT

PRT

PGT

iv Count(*)

1

v. Gender avg(salary)

M 24000

F 24500

2. The Item_No and Cost column of a table "ITEMS" are given below:

ITEM_NO	COST	
101	5000	Based on this information, find the output of the following queries: a) SELECT AVG(COST) FROM ITEMS; b) SELECT COST +100 FROM ITEMS WHERE ITEM_NO > 103;
102	NULL	
103	4000	
104	6000	
105	NULL	

A) AVG(Cost)
5000

B) Cost+100
6100
Null

3. "PrincipaiName" is a column in a table "Schools". The SQL queries
SELECT count(*) FROM Schools;
and
SELECT count(Principal) FROM schools;
Give the result 28 and 27 respectively. What may be the possible reason for this? How many records are present in the table-27 or 28?

The possible reason could be that one of the value in Principal field will be NULL
There are 28 records

4. Consider the table Projects given below. Write commands in SOL for i) and output for i) to iii)

PROJECTS

ID	ProjName	ProjSize	StartDate	EndDate	Cost
1	Payroll-MMS	Medium	2006-03-17	2006-09-16	60000
2	Payroll-ITC	Large	2008-02-12	2008-01-11	500000
3	IDMgmt-LITL	Large	2008-06-13	2009-05-21	300000
4	Recruit-LITL	Medium	2008-03-18	2008-06-01	50000
5	IDMgmt-MTC	Small	2007-01-15	2007-01-29	20000
6	Recruit-ITC	Medium	2007-03-01	2007-06-28	50000

i. To count the number of projects of cost less than 100000.
ii. SELECT SUM(Cost) FROM projects;
iii. SELECT ProjSize, COUNT(*) FROM Projects GROUP BY ProjSize;

i. Select count(*) from projects where cost<100000;
ii. Sum(cost)
980000

iii. Projsize count(*)
Medium 3
Large 2
Small 1

5. Consider the table RESULT given below. Write output

Table : Result

No	Name	Stipend	Subject	Average	Division
1	Sharon	400	English	38	THIRD
2	Amal	680	Mathematics	72	FIRST
3	Vedant	500	Accounts	67	FIRST
4	Shakeer	200	Informatics	55	SECOND
5	Anandha	400	History	85	FIRST
6	Upasna	550	Geography	45	THIRD

(i) SELECT AVG(Stipend) FROM EXAM WHERE DIVISION= "THIRD";
(ii) SELECT COUNT(DISTINCT Subject) FROM EXAM;
(iii) SELECT MIN(Average) FROM EXAM WHERE Subject= "English";

i) AVG(Stipend)
475

ii) Count(distinct subject)
6

iii) Min(Average)
38

6. What is the purpose of ORDER BY clause in MySql ? How is it different from GROUP BY clause?

Order by displays the records in ascending/descending order of field.
Group By, groups the records according to a field and then finds the maximum or minimum or counts or finds the sum or average.

7. Consider the Table SHOPPE given below. Write command in MySql for (i) and output for (ii) to (iii).
(i) To count distinct Company from the table.

Table SHOPPE :

Code	Item	Company	Qty	City	Price
102	Biscuit	Hide & Seek	100	Delhi	10.00
103	Jam	Kissan	110	Kolkata	25.00
101	Coffee	Nestle	200	Kolkata	55.00
106	Sauce	Maggi	56	Mumbai	55.00
107	Cake	Britannia	72	Delhi	10.00
104	Maggi	Nestle	150	Mumbai	10.00
105	Chocolate	Cadbury	170	Delhi	25.00

(ii) Select Count(distinct (City)) from Shoppe;
 (iii) Select MIN (Qty) from Shoppe where City="Mumbai";

i) Select count(distinct company) from shoppe;
ii) Count(distinct (city))
3
iii) Min(Qty)
56

8. Consider the table 'PERSONS' given below. Write commands in SQL for (i) to (iv) and write output for (i) to (iii).

Table : PERSONS

PId	Surname	Firstname	Gender	City	PinCode	BasicSalary
1.	Sharma	Geeta	F	Udhamwara	182141	50000
2	Singh	Surinder	M	Kupwara Nagar	193222	75000
3	Jacob	Peter	M	Bhawani	185155	45000
4	Alvis	Thomas	M	Ahmed Nagar	380025	50000
5	Mohan	Garima	M	Nagar Coolangatta	390026	33000

(i) SELECT SUM(BasicSalary) FROM Persons Where Gender='F';
 (ii) SELECT Gender,MIN(BasicSalary) FROM Persons GROUP BY gender;
 (iii) SELECT Gender,Count(*) FROM Persons GROUP BY Gender;

i) SUM(BasicSalary)
132000
ii) Gender MIN(BasicSalary)
F 40000
M 33000
iii) Gender Count(*)
F 3
M 4

9. There is a column HOBBY in a Table CONTACTS. The following two statements are giving different outputs. What may be the possible reason ?

SELECT COUNT(*) FROM CONTACTS;
 SELECT COUNT(HOBBY)FROM CONTACTS;

The possible reason could be that some of the values in the hobby field would be NULL.

10. Consider the following table named "GYM" with details about fitness items being sold in the store. Write output

(i) SELECT COUNT (DISTINCT (BRANDNAME)) FROM GYM;
 (ii) SELECT MAX (PRICE) FROM GYM;

Ans. i) COUNT (DISTINCT (BRANDNAME))
6
ii) Max(Price)

30000

11. Consider the following table named 'SBOP" with details of account holders. Write output.

Table : SBOP

Accountno	Name	Balance	DateOfopen	Transaction
SB-1	Mr .Anil	15000.00	2011-02-24	7
SB-2	Mr .Amit	23567.89		8

(i) SELECT COUNT(*) FROM SBOP;

Ans. COUNT(*)
5

12. Given 'Employee' table as follows :

Employee_ID	NAME	Commission
101	Sabhyata Sharma	NULL
102	Divya Arora	8900
103	Faizal Zaidi	NULL

What values will the following statements return ?
 SELECT COUNT(*) FROM Employee;
 SELECT COUNT(Commission) FROM Employee;

Ans. Count(*)
3
Count(Commission)
1

13. Consider the table FLIGHT given below. Write output.

Table : FLIGHT

FLCODE	START	DESTINATION	NO_STOPS	NO_FLIGHTS
IC101	DELHI	AGARTALA	1	5
IC102	MUMBAI	SIKKIM	1	3
IC103	DELHI	JAIPUR	0	7
IC105	KANPUR	CHENNAI	2	2
IC107	MUMBAI	KANPUR	0	4
IC431	INDORE	CHENNAI	3	2
IC121	DELHI	AHMEDABAD	2	6

(i) SELECT MAX(NO_FLIGHTS) FROM FLIGHT;
 (ii) SELECT START, COUNT(*) FROM FLIGHT GROUP BY Start;

	i) MAX(NO_FLIGHTS) 7	
	ii) START	COUNT(*)
	Delhi	3
	Mumbai	2
	Kanpur	1
	Indore	1

14. What will be the output of the following queries on the basis of Employee table:

```

+-----+-----+-----+
| Empld | EName | Salary
+-----+-----+-----+
| A001 | Bob | 5600 |
| A002 | John | NULL |
| A003 | Tom | 5300 |
+-----+-----+-----+

```

(i) Select avg(Salary) from Employee;
(ii) Select Salary+100 from Employee where Empld='A002';

	i) Avg(Salary) 5300
	ii) Salary+100 NULL

15. Consider the following table named "GARMENT". Write output

GCODE	GNAME	SIZE	COLOUR	PRICE
111	TShirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00
116	Ladies Top	L	Pink	1200.00

(i) SELECT COUNT(DISTINCT (SIZE)) FROM GARMENT;
(ii) SELECT AVG(PRICE) FROM GARMENT;

Ans. i) COUNT(DISTINCT (SIZE))
3
ii) AVG(PRICE)
1800

16. Consider the table 'Teacher' given below. 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. count(Department)
2
count(*)
3

17. (i) Name two Aggregate (Group) functions of SQL.
(ii) Consider the table :

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;

AVG(SALES)
15000

18. Consider the table 'Hotel' given below :

EMPID	Category	Salary
E101	MANAGER	60000
E102	EXECUTIVE	65000
E103	CLERK	40000
E104	MANAGER	62000
E105	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;

Select category,avg(salary) from hotel group by category;

19. Explain why the following queries give different outputs on execution:

i. SELECT COUNT(ENAME) FROM EMP;
Output: 5

ii. SELECT Count(*) FROM EMP;
Output: 8

The ename field in emp table will be having 3 NULL values

20. Kunal has entered the following SQL command on Table 'STUDENT' that has TotalMarks as one of the columns.
 SELECT COUNT (*) FROM STUDENT;
 The output displayed is 20.
 Then, Kunal enters the following command :
 SELECT COUNT (*) FROM STUDENT WHERE TotalMarks <100;
 The output displayed is 15.
 Then, Kunal enters the following command :
 SELECT COUNT (*) FROM STUDENT WHERE TotalMarks >= 100;
 He predicts the output of the above query as 5. Do you agree with Kunal ? Give reason for your answer.

Yes, the output for select count(*) from student where totalMarks>=100 will be 5 as there are 20 students out of which 15 have totalMarks less than 100 so 5 students will have a totalMarks greater than or equal to 100

21. Consider the table given below :
 Write command for (i) and output for (ii)

(Table : Salesperson)

SID	Name	Phone	DOB	Salary	Area
S101	Amit Kumar	98101789654	1967-01-23	67000.00	North
S102	Deepika Sharma	99104567834	1992-09-23	32000.00	South
S103	Vinay Srivastav	98101546789	1991-06-27	35000.00	North
S104	Kumar Mehta	88675345789	1967-10-16	40000.00	East
S105	Rashmi Kumar	98101567434	1972-09-20	50000.00	South

(i) To display Area along with number of Salespersons working in that area.

(ii) SELECT Area, COUNT (*) FROM Salesperson GROUP BY Area HAVING COUNT (*) > 1;

i) Select area,count(*) from salesperson group by area;

ii) Area _____ Count(*)
North 2
South 2

22. Observe the given table named "Loan" carefully and predict the output of the following queries:
 select count(file_no)-count(loan_amt) from loan;

File_No	Cust_Name	PhoneNo	Loan_Amt	Bank	Cheque Dt
619095	Ms. Roshni	9899965430	809876	HBDC Ltd.	2017-06-15
234252	Mr. Rajesh	8654327890	745738	ICUCI Ltd.	2017-07-22
543613	Mrs. Sapna	8883546354	NULL	NBI Ltd.S	2017-07-24
435467	Mr. Navneet	9764747474	647484	ICUCI Ltd.	2017-08-13
263427	Ms. Puja	8746454742	546373	HBDC Ltd.	2017-08-30

count(file_no)-count(loan_amt)
1

Informatics Practices

My SQL Worksheet-9

(Joins)

1.	<p>In a database there are two tables 'Customer' and 'Bill' as shown below:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center; border: none;">Customer</th> <th colspan="3" style="text-align: center; border: none;">Bill</th> </tr> <tr> <th style="border: 1px solid black;">CustomerID</th> <th style="border: 1px solid black;">CustomerName</th> <th style="border: 1px solid black;">CustAddress</th> <th style="border: 1px solid black;">BillNo</th> <th style="border: 1px solid black;">CustID</th> <th style="border: 1px solid black;">Bill_Amt</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">Akhilesh Narang</td> <td style="border: 1px solid black;">C4,Janak Puri,Delhi</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">12000</td> </tr> <tr> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">Purnima Williams</td> <td style="border: 1px solid black;">B1, Ashok Vihar,Delhi</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">15000</td> </tr> <tr> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">Sumedha Madaan</td> <td style="border: 1px solid black;">33, South Ext.,Delhi</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">13000</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">4</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">13000</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">5</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">14000</td> </tr> </tbody> </table> <p>(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?</p>	Customer			Bill			CustomerID	CustomerName	CustAddress	BillNo	CustID	Bill_Amt	1	Akhilesh Narang	C4,Janak Puri,Delhi	1	2	12000	2	Purnima Williams	B1, Ashok Vihar,Delhi	2	1	15000	3	Sumedha Madaan	33, South Ext.,Delhi	3	2	13000				4	3	13000				5	2	14000							
Customer			Bill																																															
CustomerID	CustomerName	CustAddress	BillNo	CustID	Bill_Amt																																													
1	Akhilesh Narang	C4,Janak Puri,Delhi	1	2	12000																																													
2	Purnima Williams	B1, Ashok Vihar,Delhi	2	1	15000																																													
3	Sumedha Madaan	33, South Ext.,Delhi	3	2	13000																																													
			4	3	13000																																													
			5	2	14000																																													
	<p>i) There will be 5 columns and 15 rows in the Cartesian product of these two tables. ii) CustID in the bill table is a foreign key</p>																																																	
2.	<p>Consider the tables HANDSETS and CUSTOMER given below:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center; border: none;">Handsets</th> <th colspan="3" style="text-align: center; border: none;">Customer</th> </tr> <tr> <th style="border: 1px solid black;">SetCode</th> <th style="border: 1px solid black;">SetName</th> <th style="border: 1px solid black;">TouchScreen</th> <th style="border: 1px solid black;">PhoneCost</th> <th style="border: 1px solid black;">CustNo</th> <th style="border: 1px solid black;">SetNo</th> <th style="border: 1px solid black;">CustAddress</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">N1</td> <td style="border: 1px solid black;">Nokia 2G</td> <td style="border: 1px solid black;">N</td> <td style="border: 1px solid black;">5000</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">N2</td> <td style="border: 1px solid black;">Delhi</td> </tr> <tr> <td style="border: 1px solid black;">N2</td> <td style="border: 1px solid black;">Nokia 3G</td> <td style="border: 1px solid black;">Y</td> <td style="border: 1px solid black;">8000</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">B1</td> <td style="border: 1px solid black;">Mumbai</td> </tr> <tr> <td style="border: 1px solid black;">B1</td> <td style="border: 1px solid black;">BlackBerry</td> <td style="border: 1px solid black;">N</td> <td style="border: 1px solid black;">14000</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">N2</td> <td style="border: 1px solid black;">Mumbai</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">4</td> <td style="border: 1px solid black;">N1</td> <td style="border: 1px solid black;">Kolkata</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">5</td> <td style="border: 1px solid black;">B1</td> <td style="border: 1px solid black;">Delhi</td> </tr> </tbody> </table> <p>With reference to these tables, Write commands in SQL for (i) and (ii) and output for (iii) below: (i) Display the CustNo, CustAddress and corresponding SetName for each customer. (ii) Display the Customer Details for each customer who uses a Nokia handset. (iii) select SetNo, SetName from Handsets, customer where SetNo = SetCode and CustAddress = 'Delhi';</p>	Handsets				Customer			SetCode	SetName	TouchScreen	PhoneCost	CustNo	SetNo	CustAddress	N1	Nokia 2G	N	5000	1	N2	Delhi	N2	Nokia 3G	Y	8000	2	B1	Mumbai	B1	BlackBerry	N	14000	3	N2	Mumbai					4	N1	Kolkata					5	B1	Delhi
Handsets				Customer																																														
SetCode	SetName	TouchScreen	PhoneCost	CustNo	SetNo	CustAddress																																												
N1	Nokia 2G	N	5000	1	N2	Delhi																																												
N2	Nokia 3G	Y	8000	2	B1	Mumbai																																												
B1	BlackBerry	N	14000	3	N2	Mumbai																																												
				4	N1	Kolkata																																												
				5	B1	Delhi																																												
	<p>i) Select custno, custaddress, setname from handsets, customer where setcode=setno; ii) Select customer.* from handsets, customer where setcode=setno and setname like "Nokia%"; iii) SetNo SetName N2 Nokia 3G B1 BlackBerry</p>																																																	
3.	<p>In a database there are two tables "Company" and "Model" as shown below:</p> <table style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center; border: none;">Company</th> <th colspan="3" style="text-align: center; border: none;">Model</th> </tr> <tr> <th style="border: 1px solid black;">CompID</th> <th style="border: 1px solid black;">CompName</th> <th style="border: 1px solid black;">CompHO</th> <th style="border: 1px solid black;">ContPerson</th> <th style="border: 1px solid black;">ModelID</th> <th style="border: 1px solid black;">CompID</th> <th style="border: 1px solid black;">ModelCost</th> </tr> </thead> <tbody> <tr> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">Titan</td> <td style="border: 1px solid black;">Okhla</td> <td style="border: 1px solid black;">C.B.Ajit</td> <td style="border: 1px solid black;">T020</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">2000</td> </tr> <tr> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">Maxima</td> <td style="border: 1px solid black;">Shahdara</td> <td style="border: 1px solid black;">V.P.Kohli</td> <td style="border: 1px solid black;">M032</td> <td style="border: 1px solid black;">4</td> <td style="border: 1px solid black;">2500</td> </tr> <tr> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">Ajanta</td> <td style="border: 1px solid black;">Najafgarh</td> <td style="border: 1px solid black;">R. Mehta</td> <td style="border: 1px solid black;">M059</td> <td style="border: 1px solid black;">2</td> <td style="border: 1px solid black;">7000</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">A167</td> <td style="border: 1px solid black;">3</td> <td style="border: 1px solid black;">800</td> </tr> <tr> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;"></td> <td style="border: 1px solid black;">T024</td> <td style="border: 1px solid black;">1</td> <td style="border: 1px solid black;">1200</td> </tr> </tbody> </table> <p>(i) Identify the foreign key column in the table Model. (ii) Check every value in CompID column of both the tables. Do you find any discrepancy?</p>	Company				Model			CompID	CompName	CompHO	ContPerson	ModelID	CompID	ModelCost	1	Titan	Okhla	C.B.Ajit	T020	1	2000	2	Maxima	Shahdara	V.P.Kohli	M032	4	2500	3	Ajanta	Najafgarh	R. Mehta	M059	2	7000					A167	3	800					T024	1	1200
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				T024	1	1200																																												
	<p>i) ComID is the foreign key in model table ii) The discrepancy is a value 4 in the compID field of Model table.</p>																																																	
4.	<p>Consider the tables DOCTORS and PATIENTS given below:</p>																																																	

DOCTORS				PATIENTS			
DocID	DocName	Department	OPD_Days	PatNo	PatName	Department	DocID
101	M. Panday	ENT	TTS	1	Neeraj	ENT	101
102	G. P. Gupta	Paed	MWF	2	Mohit	Ortho	201
201	C.K. Sharma	Ortho	MWF	3	Ragini	ENT	101
				4	Mohit	Paed	102
				5	Nandini	Ortho	201

With reference to these tables, write commands in SQL for (i) and (ii) and output for (iii) below:
 (i) Display the PatNo, PatName and corresponding DocName for each patient
 (ii) Display the list of all patients whose OPD_Days are MWF.
 (iii) select OPD_Days, Count(*) from Doctors, Patients where Patients.Department = Doctors.Department Group by OPD_Days;

**i) Select PatNo, patName, DocName
 From Doctors, Patients
 Where Doctors.DocID=Patients.DocID;**
**ii) Select Patients.*
 From Doctors, Patients
 Where Doctors.docID=Patients.DocID and OPD_Days="MWF";**
iii) OPD_Days Count(*)
TTS 2
MWF 3

5. In a database there are two tables "Product" and "Client" as shown below :

Table : PRODUCT				Table : Client			
P_ID	ProductName	Manufacture	Price	C_ID	ClientName	City	P_ID
P001	Moisturiser	XYZ	40	01	Dreamz Disney	New Delhi	P002
P002	Sanitizer	LAC	35	05	Life Line Inc	Mumbai	P005
P003	Bath Soap	COP	25	12	98.4	New Delhi	P001
P004	Shampoo	TAP	95	15	Appolo	Banglore	P003
P005	Lens Solution	COP	350				

Write the commands in SQL queries for the following :
 (i) To display the details of Product whose Price is in the range of 40 and 120 (Both values included)
 (ii) To display the ClientName, City from table Client and ProductName and Price from table Product, with their corresponding matching P ID.
 (iii) To increase the Price of all the Products by 20.

**i) Select *
 From Product
 where price between 40 and 120;**
**ii) Select clientName,city,productName,price
 From Product,Client
 Where Product.P_ID=Client.P_ID;**
**iii) Update Product
 Set price=price+20;**

6. In a Database School there are two tables Member and Division as show below.

Table : Member				Table : Division		
Empld	Name	Pay	Divno	Divno	Divname	Location
1001	Shankhya	34000	10	10	Media	TF02
1003	Ridhima	32000	50	20	Dance	FF02
1002	Sunish	45000	20	30	Production	SF01

(i) Identify the foreign key in the table Member.
 (ii) What output, you will get, when an equi-join query is executed to get the NAME from Member Table and corresponding DivName from Division table ?

i) DivNo is a foreign key in member table
ii) Name Divname
Shankhya Media
Sunish Dance

7. In a Database there are two tables :

Table ITEM:

ICode	Iname	Price
101	Television	75000
202	Computer	42000
303	Refrigerator	90000
404	Washing Machine	27000

Table BRAND :

ICode	Brand
101	Sony
202	HP
303	LG
404	IFB

Write MySql queries for the following :

- To display ICode, IName and corresponding Brand of those Items, whose Price is between 20000 and 45000 (both values inclusive).
- To display ICode, Price and BName, of the item which has IName as "Television".
- To increase the price of all the Items by 15%.

- Select ICode, IName, Brand
From Item, Brand
Where Item.Icode=Brand.ICode and price between 20000 and 45000;**
- Select ICode, Price, Brand
From Item, Brand
Where IName IN("Television");**
- Update Item
Set Price=Price + Price *15/100;**

8. In a Database there are two tables :

Table MAGAZINE:

Mag_Code	Mag_Title	Number_of_Pages	Mag_Category
1	Good Deeds	60	12
2	Health is Wealth	45	15
3	Indian Cooking	90	20
4	Karma	50	12

Mag_Category	Type
1	Bollywood
12	Spiritual
15	Fitness
20	Cookery

- Which column can be set as the PRIMARY KEY in the MAGAZINE table?
- Which column in the 'MAGAZINE' table is the foreign key?
- How many rows and columns will be there in the Cartesian product of the above 2 tables.
- Write command in SQL to display the mag_code, Mag_Title and corresponding types for all the Magazines.
- Write the output :
(vi) **Select Mag_Code, Mag_Title, Number_of_Pages, Type From MAGAZINE, MAGTYPE Where Magazine.Mag_Category=Magtype.Mag_Category and Type='Spiritual';**

- Mag_Code can be set as primary key in magazine table**
- Mag_category is the foreign key in magazine table**
- In the Cartesian product of these two tables there will be 6 columns and 16 rows.**
- Select Mag_Code, Mag_Title, Type
From Magazine, magType
Where magazine.mag_category=magType.category;**
- Mag_Code Mag_Title Number_of_Pages Type
1 Good Deeds 60 Spiritual**

9. In a Database Karnataka_Sangam there are two tables with the instances given below :

Table : STUDENTS

ADMNO	NAME	CLASS	SEC	RN	ADDRESS	PHONE
1211	Meena	12	D	4	A-26	2345678
1212	Vani	10	D	1	B-25	5456789
1213	Meena	12	A	1		
1214	Karish	10	B	3	AB-234	4567890
1215	Suraj	11	C	2	ZW12	4345677

Table : SPORTS

ADMNO	GAME	COACHNAME	GRADE
1215	Cricket	Mr.Rai	A
1213	Vollyball	Ms. Chadha	B
1211	Vollyball	Mr. Govardhan	A
1212	Basket Ball	Mr. Tiwani	B

Write SQL queries for the following :

- To count how many addresses are not having NULL values in the address column of students

table.
 (ii) To display Name, Class from STUDENT table and the corresponding Grade from SPORTS table.
 (iii) To display Name of the student and their corresponding Coachnames from STUDENTS and SPORTS tables.

- i) Select count(*)
from students
where address is not null;**
- ii) Select Name,Class,Grade
From students, sports
Where students.admno=sports.admno;**
- iii) Select Name,Coachname
From students, sports
Where students.admno=sports.admno;**

10. In a Database Multiplexes, there are two tables with the following data. Write MySQL queries for (i) to (iii), which are based on TicketDetails and AgentDetails :

Table : TicketDetails

Tcode	Name	Tickets	A_code
S001	Meena	7	A01
S002	Vani	5	A02
S003	Meena	9	A01
S004	Karish	2	A03
S005	Suraj	1	A02

Table : AgentDetails

Acode	AName
A01	Mr.Robin
A02	Mr.Ayush
A03	Mr.Trilok
A04	Mr.John

- (i) To display Tcode, Name and Aname of all the records where the number of tickets sold is more than 5.
- (ii) To display total number of tickets booked by agent "Mr. Ayush"
- (iii) To display Acode, Aname and corresponding Tcode where Aname ends with "k".
- (iv) With reference to "TicketDetails" table, which column is the primary key ? Which column is the foreign key? Give reason(s)

- i) Select TCode, Name, AName
From TicketDetails, AgentDetails
Where A_Code=Acode and tickets>5;**
- ii) Select sum(Tickets)
From TicketDetails, AgentDetails
Where A_Code=Acode and aName="Mr. Ayush";**
- iii) Select Acode, AName, Tcode
From TicketDetails, AgentDetails
Where A_Code=Acode and Aname like "k%";**
- iv) In TicketDetails TCode is Primary Key and A_code is foreign key as two tickets cannot have same no. whereas the Agent code i.e. A_Code is referencing its values from the Acode field in AgentDetails table.**

11. In a database there are two tables 'CD' and 'TYPE' as shown below :

Table : CD

CODE	TITLE	DURATION	SINGER	CATEGORY
101	Sufi Songs	50 min	Zakir Faiz	12
102	Eureka	45 min	Shyama Mukherjee	12
103	Nagmey	23 min	Sonvi Kumar	77
104	Dosti	35 min	Bobby	1

Table : TYPE

CATEGORY	DESCRIPTION
1	Jazz
12	Classical
40	Country Side
78	Pop

- (i) Name the Primary key in "CD" table.
- (ii) Name the foreign key in "CD" table.
- (iii) Write the Cardinality and Degree of "TYPE" table.
- (iv) Check every value in CATEGORY column of both the tables. Do you find any discrepancy ? State the discrepancy.

- i) Code**
- ii) Category**
- iii) Cardinality = 4 and Degree = 2 of the Type table**
- iv) Yes, the discrepancy is a value 77 in category field in CD table.**

Table : GARMENT

SSCODE	GNAME	SIZE	COLOUR	PRICE
111	T-shirt	XL	Red	1400.00
112	Jeans	L	Blue	1600.00
113	Skirt	M	Black	1100.00
114	Ladies Jacket	XL	Blue	4000.00
115	Trousers	L	Brown	1500.00

13. Consider the tables 'Flights' & 'Fares' given below:
Flights

FNO	SOURCE	DEST	NO_OF_FL	NO_OF_STO	P
IC301	MUMBAI	BANGALORE	3	2	
IC799	BANGALORE	KOLKATA	8	3	
MC101	DELHI	VARANASI	6	0	
IC302	MUMBAI	KOCHI	1	4	
AM812	LUCKNOW	DELHI	4	0	
MU499	DELHI	CHENNAI	3	3	

Fares

FNO	AIRLINES	FARE	TAX
IC301	Indian Airlines	9425	5
IC799	Spice Jet	8846	10
MC101	Deccan Airlines	4210	7
IC302	Jet Airways	13894	5
AM812	Indian Airlines	4500	6
MU499	Sahara	12000	4

With reference to these tables, write commands in SQL for (i) and (ii) and output for (iii) below:

i. To display flight number, source, airlines of those flights where fare is less than Rs. 10000.

ii. To count total no of Indian Airlines flights starting from various cities.

iii. SELECT FLIGHTS.FNO, NO_OF_FL, AIRLINES FROM FLIGHTS,FARES WHERE FLIGHTS.FNO = FARES.FNO AND SOURCE='DELHI';

- i) Select Flights.FNO, Source,airlines
From Flights, Fares
Where Flights.FNO=FARES.FNO and fare<10000;**
- ii) Select Sum(No_of_FI)
From Flights, Fares
Where Flights.FNO=FARES.FNO and airlines="Indian Airlines";**
- iii) FLIGHTS.FNO NO_OF_FL AIRLINES
MC101 6 Deccan Airlines
MU499 3 Sahara**

14. A table STUDENT has 5 rows and 3 columns. Table ACTIVITY has 4 rows and 2 columns. What will be the cardinality and degree of the Cartesian product of them ?

**The degree will be 5
The cardinality will be 20**

15. Consider the following table named "GARMENT".
What is the degree and cardinality of 'Garment' table ?

**Degree=5
Cardinality=6**

16. In a Database, there are two tables given below :

Table : EMPLOYEE				Table : JOB		
EMPLOYEEID	NAME	SALES	JOBID	JOBID	JOBTITLE	SALARY
E1	SAMIT SINHA	1100000	102	101	President	200000
E2	VIJAY SINGH TOMAR	1300000	101	102	Vice President	125000
E3	AJAY RAJPAL	1400000	103	103	Administration Assistant	80000
E4	MOHIT RAMNANI	1250000	102	104	Accounting Manager	70000
E5	SHAILJA SINGH	1450000	103	105	Accountant	65000
				106	Sales Manager	80000

Write SQL Queries for the following :

(i) To display employee ids, names of employees, job ids with corresponding job titles.

(ii) To display names of employees, sales and corresponding job titles who have achieved sales more than 1300000.

(iii) To display names and corresponding job titles of those employee who have 'SINGH' (anywhere) in their names.

(iv) Identify foreign key in the table EMPLOYEE.

**i) Select EmployeeID, Name, JobID, JobTitle
From Employee, Job
Where Employee.jobid=job.jobid;**

**ii) Select Name, Sales, Jobtitle
From Employee, Job
Where Employee.jobid=job.jobid and sales>1300000;**

**iii) Select Name, Jobtitle
From Employee, Job
Where Employee.jobid=job.jobid and name like “%Singh%”;**

iv) JobID

17. Consider the tables given below.

Salesperson				Orders		
SalespersonId	Name	Age	Salary	OrderId	SalespersonId	Amount
1	Ajay	61	140000	10	2	54000
2	Sunil	34	44000	20	7	18000
5	Chris	34	40000	30	1	46000
7	Amaaya	41	52000	40	5	24000

i. The SalespersonId column in the "Salesperson" table is the **Primary Key**. The SalespersonId column in the "Orders" table is a **Foreign KEY**.

ii. Can the 'SalespersonId' be set as the primary key in table 'Orders'. Give reason.

ii. No salespersonID cannot be set as the primary key in orders table as two salesperson can give multiple orders, so the ordered will be primary key and salespersonID will be the foreign key which will refer its values from the salespersonid field of salesperson table.

18. With reference to the above given tables, 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.

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.

iii. SELECT Salesperson.SalespersonId, name, age, amount FROM Salesperson, orders WHERE Salesperson.salespersonId= Orders.salespersonId AND AGE BETWEEN 30 AND 45;

**i. Select Salesperson.salespersonID, Name, OrderID
From Salespersons, orders
Where Salesperson.salespersonID=Orders.SalespersonID;**

**ii. Select Salesperson.salespersonID, Name, OrderID
From Salespersons, orders
Where Salesperson.salespersonID=Orders.SalespersonID
and name like "A%" and amount between 15000 and 20000;**

**iii. Salesperson.SalespersonId name age amount
2 Sunil 34 54000
5 Chris 34 24000**

19. Consider the tables given below :

Table : Faculty

TeacherId	Name	Address	State	PhoneNumber
T101	Savita Sharma	A-151, Adarsh Nagar	Delhi	991019564
T102	Deepak Ghai	K-5/52, Vikas Vihar	Mumbai	893466448
T103	MahaLakshmi	D-6	Delhi	981166568
T104	Simi Arora		Mumbai	658777564

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 ? (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.																																																				
	i) TeacherID ii) Yes, it is possible to have both Primary and foreign key in one table. For Example in the above course table CourseID is a primary key and teacherid is the foreign key.																																																				
20.	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. (ii) To display TeacherID, Names of Teachers, Subjects of all teachers with names of Teachers starting with 'S'. (iii) SELECT CourseId, Subject, Course.TeacherId, Name, PhoneNumber FROM Faculty, Course WHERE Faculty.TeacherId = Course.TeacherId AND Fee >= 5000;																																																				
	i) Select courseId, Course.TeacherID, Name, PhoneNumber From Faculty, Course Where Faculty.TeacherID=Course.TeacherID and state="Delhi"; ii) Select Faculty.TeacherID, Name, Subject From Faculty, Course Where Faculty.TeacherID=Course.TeacherID and name like "S%"; iii) CourseId Subject Course.TeacherId Name C105 Advance Computer Science T104 Simi Arora 658777564																																																				
21.	Consider the tables given below which are linked with each other and maintains referential integrity: Table: SAP <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SAPID</th> <th>ItemCode</th> <th>ItemName</th> <th>ItemStorage Location</th> </tr> </thead> <tbody> <tr> <td>S1001</td> <td>1001</td> <td>Receiver</td> <td>W12-B3-R24</td> </tr> <tr> <td>S1002</td> <td>1002</td> <td>Transponder</td> <td>W13-B7-R87</td> </tr> <tr> <td>S1003</td> <td>1003</td> <td>Battery Bank</td> <td>W21-B1-R87</td> </tr> <tr> <td>S1004</td> <td>1004</td> <td>Inverter</td> <td>W21-B11-R2</td> </tr> <tr> <td>S1005</td> <td>1005</td> <td>Genset</td> <td>W22-B15-R16</td> </tr> </tbody> </table> Table : Store <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>StoreID</th> <th>ItemCode</th> <th>StoreLocation</th> <th>ReceivedDate</th> </tr> </thead> <tbody> <tr> <td>1201</td> <td>1001</td> <td>Hauz Khas</td> <td>2016/05/20</td> </tr> <tr> <td>1202</td> <td>1002</td> <td>Rajouri Garden</td> <td>2016/06/14</td> </tr> <tr> <td>1203</td> <td>1003</td> <td>Rohini</td> <td>2016/05/06</td> </tr> <tr> <td>1204</td> <td>1004</td> <td>Hauz Khaas</td> <td>2016/07/15</td> </tr> <tr> <td>1205</td> <td>1005</td> <td>Rajendra Place</td> <td>2016/05/27</td> </tr> </tbody> </table> With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) below:					SAPID	ItemCode	ItemName	ItemStorage Location	S1001	1001	Receiver	W12-B3-R24	S1002	1002	Transponder	W13-B7-R87	S1003	1003	Battery Bank	W21-B1-R87	S1004	1004	Inverter	W21-B11-R2	S1005	1005	Genset	W22-B15-R16	StoreID	ItemCode	StoreLocation	ReceivedDate	1201	1001	Hauz Khas	2016/05/20	1202	1002	Rajouri Garden	2016/06/14	1203	1003	Rohini	2016/05/06	1204	1004	Hauz Khaas	2016/07/15	1205	1005	Rajendra Place	2016/05/27
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	i. Select SAP.ItemCode, ItemName, ReceivedDate From SAP, Store Where SAP.ItemCode=Store.ItemCode; ii. Select SapID, ItemName, storeLocation From SAP, Store Where SAP.ItemCode=Store.ItemCode and ReceivedDate > "2016-05-02"; iii. SAPID ItemName STOREID S1001 Receiver 1201 S1004 Inverter 1204 iv. The degree will be 8 The cardinality will be 25																																																				

v.

She will not be able to insert the record as 1006 ItemCode is not there in the itemCode field in SAP table and since ItemCode in store table is a foreign key so it will refer its value from the itemcode field of SAP table.

Informatics Practices
My SQL Worksheet-10
(Transaction)

1.	Which command is used in MySql to make the changes in database permanent?																																																				
	Commit																																																				
2.	Give one difference between ROLLBACK and COMMIT commands used in MySql.																																																				
	Rollback reverses all the changes being done using insert, update or delete after starting the transaction. Commit saves all the changes being done by Insert, Update or delete after starting the transaction.																																																				
3.	<p>A table named 'GAMES' has the following contents:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th>GCode</th> <th>GameName</th> <th>Number_of_Players</th> <th>PrizeMoney</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Carom Board</td> <td>2</td> <td>5000</td> </tr> <tr> <td>102</td> <td>Badminton</td> <td>2</td> <td>12000</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>4</td> <td>8000</td> </tr> </tbody> </table> <p>Write the output that will be displayed by statements (i) and (ii). SELECT * FROM GAMES; SET AUTOCOMMIT = 0; INSERT INTO GAMES VALUES(105,'CHESS',2,9000); ROLLBACK; SAVEPOINT S1; SELECT * FROM GAMES; ----- (i) INSERT INTO GAMES VALUES(108,'LAWN TENNIS',4,25000); SAVEPOINT S2; INSERT INTO GAMES VALUES(109,'CRICKET',11,20000); ROLLBACK TO S2; SELECT * FROM ITEM; ----- (ii)</p> <p>i)</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th>GCod e</th> <th>GameNam e</th> <th>Number_of_Play ers</th> <th>PrizeMon ey</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Carom Board</td> <td>2</td> <td>5000</td> </tr> <tr> <td>102</td> <td>Badminton</td> <td>2</td> <td>12000</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>4</td> <td>8000</td> </tr> </tbody> </table> <p>ii)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>GCod e</th> <th>GameNam e</th> <th>Number_of_Play ers</th> <th>PrizeMon ey</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>Carom Board</td> <td>2</td> <td>5000</td> </tr> <tr> <td>102</td> <td>Badminton</td> <td>2</td> <td>12000</td> </tr> <tr> <td>103</td> <td>Table Tennis</td> <td>4</td> <td>8000</td> </tr> <tr> <td>108</td> <td>Lawn Tennis</td> <td>4</td> <td>25000</td> </tr> </tbody> </table>	GCode	GameName	Number_of_Players	PrizeMoney	101	Carom Board	2	5000	102	Badminton	2	12000	103	Table Tennis	4	8000	GCod e	GameNam e	Number_of_Play ers	PrizeMon ey	101	Carom Board	2	5000	102	Badminton	2	12000	103	Table Tennis	4	8000	GCod e	GameNam e	Number_of_Play ers	PrizeMon ey	101	Carom Board	2	5000	102	Badminton	2	12000	103	Table Tennis	4	8000	108	Lawn Tennis	4	25000
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4.	<p>Consider the Stu table</p> <p>The following SQL queries are executed on the above table</p> <pre>INSERT INTO Stu VALUES(5,'Gagan'); COMMIT; UPDATE Stu SET name='Abhi' WHERE Rollno = 4</pre> <p>SAVEPOINT A; INSERT INTO Stu VALUES(6,'Chris'); SAVEPOINT B; INSERT INTO Stu VALUES(7,'Babita'); SAVEPOINT C;</p> <p>ROLLBACK TO A;</p> <p>What will be the output of the following SQL query now:</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tbody> <tr> <td style="width: 5%; text-align: center;">2</td> <td>Bimmi</td> </tr> </tbody> </table>	2	Bimmi																																																		
2	Bimmi																																																				

4	Aakash
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SELECT * FROM Stu;

RollN	Name
0	
1	Ashi
2	Bimmi
4	Abhi
6	Chris

5. 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;
```

RNo	Name
1	Amit
2	Bhishm
5	Rahuliya
6	Cristina

6. Geetanjali had created a table "Customer" in the database "Test". Immediately after the successful creation of the database, she wrote the Rollback command to undo the creation of the table. Did she execute rollback successfully? Explain.

No, She did not execute the command successfully as rollback command only reverses the changes done using INSERT, UPDATE or DELETE.

7. Given below is the 'Department' table :

DEPCODE	DEPNAME
101	ADMIN
102	RECEPTION
103	PERSONNEL

```
SET AUTOCOMMIT = 0;
UPDATE Department SET DEPNAME = 'OFFICE' WHERE DEPNAME =
'ADMIN';
INSERT INTO Department VALUES (104, 'HRD');
UPDATE Department SET DEPNAME = 'FRONT OFFICE' WHERE
DEPNAME = 'RECEPTION';
COMMIT;
DELETE FROM Department WHERE DEPNAME = 'FRONT OFFICE';
ROLLBACK;
SELECT * FROM Department;
```

What will be the output of the above given SELECT statement ?

DepCode	DepName
101	OFFICE
102	FRONT OFFICE
103	PERSONNEL
104	HRD

