**SQL Worksheet-1   
(DDL – Database Related commands)**

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| 1. | If a database "Employee" exists, which SQL command helps you to start working in that database? |
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| 2. | Write SQL command will be used to open an already existing database "LIBRARY". |
|  |  |
| 3. | Write SQL command to open an existing database. |
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| 4. | What does SQL stand for? What is SQL? |
|  |  |
| 5. | Write two examples of DBMS software. |
|  | C` |
| 6. | Sharmila wants to make the database named ‘COMPANY’ active. Write SQL commands for it. |
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| 7. | What is SQL ? |
|  |  |
| 8. | What is the relationship between SQL and SQL ? |
|  |  |
| 9. | Mention any two example of common Database Management System. |
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| 10. | Suggest Archana suitable command for the following purpose:   1. To display the list of the database already existing in SQL. 2. To use the database named City. 3. To remove the pre-existing database named Clients. |
|  | i.  ii.  iii. |
| 11. | Write the command to display the name of the active database. |
|  |  |
| 12. | Write the command to create a new database “School” |
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**SQL Worksheet-2   
(DDL – Table Related commands excluding Alter table)**

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| --- | --- |
| 1. | Write an SQL query to create the table 'Menu' with the following structure: |
|  |  |
| 2. | Can a table have multiple primary keys? Can it have multiple foreign keys? |
|  |  |
| 3. | In a Student table, out of Roll Number, Name, Address which column can be set as Primary key and why? |
|  |  |
| 4. | Ms. Mirana wants to remove the entire content of a table "BACKUP" alongwith its structure to release the storage space. What SQL statement should she use ? |
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| 5. | Write SQL command to create the Table STOCK including its Constraints.  Table STOCK : |
|  |  |
| 6. | Write one similarity and one difference between CHAR and VARCHAR data types. |
|  |  |
| 7. | Saumya had previously created a table named ‘Product’ in a database using SQL. Later on she forgot the table structure. Suggest her suitable SQL command through which she can check the structure of the already created table. |
|  |  |
| 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. |
|  |  |
| 9. | Name the SQL commands used to :  (i) Physically delete a table from the database.  (ii) Display the structure of a table. |
|  |  |
| 10. | Write one similarity and one difference between UNIQUE and PRIMARY KEY constraints. |
|  |  |
| 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? |
|  |  |
| 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. |
|  |  |
| 13. | Write SQL query to create a table ‘Player’ with the following structure: |
|  |  |
| 14. | Anita has created the following table with the name ‘Order’.    One of the rows inserted is as follows :    (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 :    Will she be able to successfully insert it ? Give reason. |
|  |  |
| 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 |  | |
|  |  |
| 16. | Observe the given table carefully and answer the following questions:    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. |
|  |  |
| 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 : |
|  |  |
| 18. | suggest her suitable command for the following purpose:   1. To display the list of the database already existing in SQL. 2. To use the database named City. 3. To remove the pre-existing database named Clients. 4. To remove all the records of the table named “Club” at one go along with its structure permanently. |
|  |  |
| 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. |
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**SQL Worksheet-3   
(DDL – Alter Table commands)**

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| --- | --- |
| 1. | Sahil created a table in SQL. 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? |
|  |  |
| 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? |
|  |  |
| 3. | Kuhu has already created a table ‘Hospital’ as shown below:    Now she wants to add a new column ‘Address’ to the above given table. Suggest suitable SQL command for the same. |
|  |  |
| 4. | Write SQL command to remove column named ‘Hobbies’ from a table named ‘Student’. |
|  |  |
| 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? |
|  |  |
| 6. | Kunal created the following table with the name ‘Friends’ :  Table : Friends   |  |  |  | | --- | --- | --- | | FriendCode | Name | Hobbies | | F101 | Bijoy | Swimming | | F102 | Abhinav | Reading books | | F103 | Jyotsna | Dancing |   Now, Kunal wants to delete the ‘Hobbies’ column. Write the SQL statement |
|  |  |
| 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; |
|  |  |
| 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. |
|  |  |
| 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. |
|  |  |
| 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. |
|  |  |

**SQL Worksheet-4   
(DML – INSERT INTO commands)**

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| --- | --- |
| 1. | Rama is not able to change a value in a column to NULL. What constraint did she specify when she created the table? |
|  |  |
| 2. | Consider the table RESULT given below.  Write command to insert a new row  6, "Mohan", 500, "English", 73, "Second" |
|  |  |
| 3. | Consider the Table SHOPPE given below.    To insert a new row in the table Shoppe  '110', 'Pizza' , 'Papa Jones', 120, "Kolkata", 50.0 |
|  |  |
| 4. | How is NULL value different from 0 (Zero) value? |
|  |  |
| 5. | Consider the following table named "GYM"    Add a new row for a new item in GYM with the details: "G107", "Vibro exerciser” ,21000, “GTCFitness" |
|  |  |
| 6. | What is meant by NULL value in SQL? |
|  |  |
| 7. | Rewrite the following SQL statement after correcting error(s). Underline the corrections made.  INSERT IN STUDENT(RNO,MARKS) VALUE (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); |
|  |  |
| 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) ; |
|  |  |
| 10. | Anita has created the following table with the name ‘Order’.    One of the rows inserted is as follows :    (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 :    Will she be able to successfully insert it ? Give reason. |
|  |  |
| 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 |
|  |  |
| 12. | Is NULL and 0(zero) same? Jusify your answer. |
|  |  |
| 13. | Write the full forms of the following:  i. DDL ii. DML |
|  |  |

**SQL Worksheet-5   
(DML – UPDATE and DELETE commands)**

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| --- | --- |
| 1. | What is the purpose of DROP TABLE command in SOL? How is it different from DELETE command? |
|  |  |
| 2. | In a database there are two tables "Product" as shown below :    Write the command To increase the Price of all the Products by 20. |
|  |  |
| 3. | Write the UPDATE command to change “Sharma” to “Singh” in the “LastName” column in the Employee table. |
|  |  |
| 4. | What is the use of UPDATE statement in SQL ? How is it different from ALTER statement? |
|  |  |
| 5. | Consider the following table named "GYM"    Write command To change the Brandname to "Fit Trend India" of the item, whose ICODE as "G101 ". |
|  |  |
| 6. | Write the UPDATE statement in SQL to increase commission by 100.00 in the ‘‘Commission’’ column in the ‘Emp’ table. |
|  |  |
| 7. | Write two examples of DML commands of SQL. |
|  |  |
| 8. | In a database there are two tables ‘CD’ and ‘TYPE’ as shown below :   |  |  | | --- | --- | |  |  |   Write SQL statement to change the name of Singer ‘‘Sonvi Kumar’’ to ‘‘Sonvi Mehra’’ in all the places wherever it occurs in CD table. |
|  |  |
| 9. | Consider the following table named “GARMENT”.     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” |
|  |  |
| 10. | In a Database, there are two tables given below :    Write SQL command to change the JOBID to 104 of the Employee with ID as E4 in the table ‘EMPLOYEE’. |
|  |  |
| 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 SQL command should she use to change the marks in ‘Student’ table. |
|  |  |
| 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. |
|  |  |
| 13. | Consider the following table:  Table: PharmaDB    Write commands in SQL to increase the price of “Amlodipine” by 50. |
|  |  |

**SQL Worksheet-6   
(DML – SELECT command)**

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| --- | --- |
| 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; |
|  |  |
| 2. | The LastName column of a table "Directory" is given below:   |  |  | | --- | --- | |  | 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"; | |
|  |  |
| 3. | Consider the table TEACHER given below. Write commands in SQL for (1) to (3) and output for (4)    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; |
|  |  |
| 4. | The ltem\_No and Cost columna of a table "ITEMS" are given below:   |  |  | | --- | --- | |  | Based on this information, find the output of the following queries:  a) SELECT COST +100 FROM ITEMS WHERE ITEM\_NO > 103; | |
| 5. | Consider the table Projects given below. Write commands in SOL for i) to iii) and output for iv)    i. To display all information about projects of"Medium" ProjSize  ii. To list the ProjSize of projects whose ProjName ends with LITL.  iii. To list ID, Name, Size, and Cost of all the projects in descending order of StartDate.  iv. SELECT DISTINCT ProjSize FROM projects |
|  |  |
| 6. | The Mname Column of a table Members is given below :   |  |  | | --- | --- | |  | Based on the information, find the output of the following queries :  (i) Select Mname from members where mname like "%v" ;  (ii) Select Mname from members where mname like "%e%"; | |
| 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 SQL 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. |
|  |  |
| 8. | Consider the table RESULT given below. Write commands in SQL for (i) to (ii)    (i) To list the names of those students, who have obtained Division as FIRST in the ascending order of NAME.  (ii) To display a report listing NAME, SUBJECT and Annual stipend received assuming that the stipend column has monthly stipend. |
|  |  |
| 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. |
|  |  |
| 10. | Consider the Table SHOPPE given below. Write command in SQL for (i) to (ii)    (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. |
|  |  |
| 11. | What is used in the SELECT clause to return all the columns in the table? |
|  |  |
| 12. | In SQL, 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).   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Sumit’s Output   |  | | --- | | 101 | | 102 | | 101 | | 105 | | 101 | | 107 | | Fauzia’s Output   |  | | --- | | 101 | | 102 | | 105 | | 107 | |   Which extra keyword has Fauzia used with SELECT statement to get the above output? |
|  |  |
| 13. | Consider the table ‘PERSONS’ given below. Write commands in SQL for (i) to (iv) and write output for (v).  6   1. Display the SurNames, FirstNames and Cities of people residing in Udhamwara city. 2. Display the Person Ids (PID), cities and Pincodes of persons in descending order of Pincodes. 3. Display the First Names and cities of all the females getting Basic salaries above 40000. 4. Display First Names and Basic Salaries of all the persons whose firstnames starts with “G”. 5. SELECT Surname FROM Persons Where BasicSalary>=50000; |
|  |  |
| 14. | 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;  Rewrite the above query to get the desired output. |
|  |  |
| 15. | Consider the following table named "GYM" with details about fitness items being sold in the store. Write command of SQL for (i) to (ii).    (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. |
|  |  |
| 16. | Consider the following table named 'SBOP" with details of account holders. Write commands of SQL for (i) to (ii) and output for (iii).    (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”; |
|  |  |
| 17. | When using the LIKE clause, which wildcard symbol represents any sequence of none, one or more characters ? |
|  |  |
| 18. | Consider the table FLIGHT given below. Write commands in SQL for (i) to (iv) and output for (v).    (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; |
|  |  |
| 19. | What will be the output of the following queries on the basis of Employee table:    (i) Select Salary+100 from Employee where EmpId='A002'; |
|  |  |
| 20. | Pranay, who is an Indian, created a table named “Friends” to store his friend’s detail.  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%’; |
|  |  |
| 21. | Consider the following table named “GARMENT”. Write command of SQL for (i)  to (iv) and output for (v) to (vii).  (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; |
|  |  |
| 22. | Consider the table ‘empsalary’.  To select tuples with some salary ,Siddharth has written the following erroneous SQL  statement:  SELECT ID, Salary FROM empsalary WHERE Salary = something; |
|  |  |
| 23. | Consider the table ‘Employee’.  Write the SQL command to obtain the following output : |
|  |  |
| 24. | Table “Emp” is shown below. Write commands in SQL for (i) to (iii) and output for (iv) and (v)  and (vi)  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%’; |
|  |  |
| 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. |
|  |  |
| 26. | Write commands in SQL for (i) to (iii) and output for (iv).  Table : Store   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | StoreId | Name | Location | City | NoOfEmployees | DateOpened | SalesAmount | | S101 | Planetfashion | 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 | Superfashion | 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; |
|  |  |
| 27. | 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. |
|  |  |
| 28. | Consider the following table:  Table: PharmaDB  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 Parmacy”, “Raj Medicos”); |
|  |  |
| 29. | Write SQL statement that gives the same output as the following SQL statement but uses ‘IN’ keyword.  SELECT NAME FROM STUDENT WHERE STATE = ‘VA’ ; |
|  |  |
| 30. | 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%’; |
|  |  |
| 31. | Write Answer to (i). Write SQL queries for (ii) to (vii).  **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. |
|  |  |
| 32. | Write the following statement using ‘OR’ logical operator :  SELECT first\_name, last\_name, subject FROM studentdetailsWHERE subject IN (‘Maths’, ‘Science’); |
|  |  |
| 33. | Consider the Table “Gym” shown below. Write commands in SQL for (i) to (vi) :    (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. |
|  |  |
| 34. | Consider the following table:  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’); |
|  |  |

**SQL Worksheet-7   
(Single Row Functions)**

|  |  |
| --- | --- |
| 1. | Write the output of the following SQL queries:  a) SELECT ROUND(6.5675, 2);  b) SELECT TRUNCATE(5.3456, 1);  c) SELECT DAYOFMONTH('2009-08-25');  d) SELECT MID('Class 12', 2,3); |
| 2. | Write the output of the following SQL queries :   1. SELECT INSTR(‘UNICODE’,’CO’); 2. SELECT RIGHT(‘Informatics’,3); |
|  |  |
| 3. | State difference between date functions NOW( ) and SYSDATE( ) of SQL. |
|  |  |
| 4. | Name a function of SQL which is used to remove trailing and leading spaces from a string. |
|  |  |
| 5. | Consider the following table named 'SBOP" with details of account holders. Write output    (i) SELECT ROUND(Balance,-3) FROM SBOP WHERE AccountNo=”SB-5”; |
| 6. | Write the output of the following SQL queries :  (i) SELECT RIGHT(‘software’, 2);  (ii) SELECT INSTR(‘twelve’,‘lv’);  (iii) SELECT DAYOFMONTH(‘2014-03-01’);  (iv) SELECT ROUND(76.987, 2); |
| 7. | Write the output of the following SQL queries:  i. SELECT INSTR(‘INTERNATIONAL’, ‘NA’);  ii. SELECT LENGTH(CONCAT(‘NETWORK’,’ING’));  iii.SELECT ROUND(563.345,-2);  iv. SELECT DAYOFYEAR(‘2014-01-30’); |
| 8. | 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).  **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’; |
|  |  |
| 9. | Write the output of the following SQL queries:  i) SELECT TRUNCATE(8.975,2);  ii) SELECT MID(‘HONESTY WINS’,3,4);  iii) SELECT RIGHT(CONCAT(‘PRACTICES’,’INFORMATICS’),5);  iv) SELECT DAYOFMONTH(‘2015-01-16’); |
| 10. | Write the output of the following SQL queries :  (i) SELECT MID(‘BoardExamination’,2,4);  (ii) SELECT ROUND(67.246,2);  (iii) SELECT INSTR(‘INFORMATION FORM’,‘FOR’);  (iv) SELECT DAYOFYEAR(‘2015-01-10’); |
| 11. | Write output.  Table : Store   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | StoreId | Name | Location | City | NoOfEmployees | DateOpened | SalesAmount | | S101 | Planetfashion | 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 | Superfashion | Defence  Colony | Delhi | 8 | 2015-02-18 | 450000 | | S105 | Rage | Bandra | Mumbai | 5 | 2015-09-22 | 600000 |   (i) SELECT Name, length (name), left (name, 3) FROM Store where NoOfEmployees<3; |
|  |  |
| 12. | Write the output of the following SQL queries:  SELECT POW(INSTR(‘My\_Database’,’\_’),2); |
| 13. | Consider the table given below :  Write output.    (i) SELECT Name, LENGTH(Name) FROM Salesperson; |
| 14. | Identify Single Row functions of SQL amongst the following :  TRIM(), MAX(), COUNT(\*), ROUND() |
|  |  |
| 15. | Consider the Table “Gym” and write output    (i) SELECT MID(Mname,1,2)from Gym; |
| 16. | Observe the given table named “Loan” carefully and predict the output of the  following queries:   1. SELECT concat(left(file\_no,2), right(cust\_name,2)) AS “ID” from loan where Bank='ICUCI Ltd.'; 2. select round(loan\_amt-loan\_amt\*10/100) As "Discounted Payment" from loan where loan\_amt>700000; |
|  |  |

**SQL Worksheet-8   
(Aggregate Functions)**

|  |  |
| --- | --- |
| 1. | Consider the table TEACHER given below. Write commands in SQL for (1) and output for (2) to (5)    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; |
|  |  |
| 2. | The ltem\_No and Cost column of a table "ITEMS" are given below:   |  |  | | --- | --- | |  | 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; | |
|  |  |
| 3. | "PrincipaiName" is a column in a table "Schools". The SOL 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? |
|  |  |
| 4. | Consider the table Projects given below. Write commands in SOL fori) and output for i) to iii)    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; |
|  |  |
| 5. | Consider the table RESULT given below. Write output    (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"; |
|  |  |
| 6. | What is the purpose of ORDER BY clause in SQL ? How is it different from GROUP BY clause? |
|  |  |
| 7. | Consider the Table SHOPPE given below. Write command in SQL for (i) and output for (ii) to (iii).  (i) To count distinct Company from the table.  (ii) Select Count(distinct (City)) from Shoppe;  (iii) Select MIN (Qty) from Shoppe where City="Mumbai"; |
|  |  |
| 8. | 6Consider the table ‘PERSONS’ given below. Write commands in SQL for (i) to (iv) and write output for (i) to (iii).   1. SELECT SUM(BasicSalary) FROM Persons Where Gender=’F’; 2. SELECT Gender,MIN(BasicSalary) FROM Persons GROUP BY gender; 3. SELECT Gender,Count(\*) FROM Persons GROUP BY Gender; |
|  |  |
| 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; |
|  |  |
| 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; |
| 11. | Consider the following table named 'SBOP" with details of account holders. Write output.    (i) SELECT COUNT(\*) FROM SBOP; |
| 12. | Given ‘Employee’ table as follows :    What values will the following statements return ?  SELECT COUNT(\*) FROM Employee;  SELECT COUNT(Commission) FROM Employee; |
| 13. | Consider the table FLIGHT given below. Write output.    (i) SELECT MAX(NO\_FLIGHTS) FROM FLIGHT;  (ii) SELECT START, COUNT(\*) FROM FLIGHT GROUP BY Start; |
|  |  |
| 14. | What will be the output of the following queries on the basis of Employee table:    (i)Select avg(Salary) from Employee;  (ii) Select Salary+100 from Employee where EmpId='A002'; |
|  |  |
| 15. | Consider the following table named “GARMENT”. Write output    (i) SELECT COUNT(DISTINCT (SIZE)) FROM GARMENT;  (ii) SELECT AVG (PRICE) FROM GARMENT; |
| 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; |
| 17. | (i) Name two Aggregate (Group) functions of SQL.  (ii) Consider the table :   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Table : Company   |  |  | | --- | --- | | SID | SALES | | S101 | 20000 | | S103 | NULL | | S104 | 10000 | | S105 | 15000 | | What output will be displayed by the following SQL statement ?  SELECT AVG(SALES) FROM Company; | |
| 18. | Consider the table ‘Hotel’ given below :   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | Table : Hotel   |  |  |  | | --- | --- | --- | | 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; | |
| 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** |
|  |  |
| 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. |
|  |  |
| 21. | Consider the table given below :  Write command for (i) and output for (ii)  (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; |
|  |  |
| 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; |

**SQL Worksheet-9   
(Joins)**

|  |  |  |  |
| --- | --- | --- | --- |
| 1. | In a database there are two tables 'Customer' and 'Bill' as shown below:   |  |  | | --- | --- | |  |  |   (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? |
|  |  |
| 2. | Consider the tables HANDSETS and CUSTOMER given below:   |  |  | | --- | --- | |  |  |   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'; |
|  |  |
| 3. | In a database there are two tables "Company" and "Model" as shown below:   |  |  | | --- | --- | |  |  |   (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? |
|  |  |
| 4. | Consider the tables DOCTORS and PATIENTS given below:   |  |  | | --- | --- | |  |  |   W1th reference to these tables, wnte commands m SQL for (1) 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; |
|  |  |
| 5. | In a database there are two tables "Product" and "Client" as shown below :   |  |  | | --- | --- | |  |  |   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. |
|  |  |
| 6. | In a. Database School there are two tables Member and Division as show below.   |  |  | | --- | --- | |  |  |   (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 ? |
|  |  |
| 7. | In a Database there are two tables :   |  |  | | --- | --- | | Table ITEM: |  |   Write SQL queries for the following :  (i) To display ICode, IName and corresponding Brand of those Items, whose Price is between 20000 and 45000 (both values inclusive).  (ii) To display ICode, Price and BName, of the item which has IName as "Television".  (iii) To increase the price of all the Items by 15%. |
|  |  |
| 8. | In a Database there are two tables :   |  |  | | --- | --- | | Table MAGAZINE:  7 | 8 |   (i) Which column can be set as the PRIMARY KEY in the MAGAZINE table?  (ii) Which column in the ‘MAGAZINE’ table is the foreign key?  (iii) How many rows and columns will be there in the Cartesian product of the above 2 tables.  (iv) Write command in SQL to display the mag\_code, Mag\_Title and corresponding types for all the Magazines.  (v) Write the output :   1. Select Mag\_Code, Mag\_Title, Number\_of\_Pages, Type From MAGAZINE,MAGTYPE Where Magazine.Mag\_Category=Magtype.Mag\_Category and Type=’Spiritual’; |
|  |  |
| 9. | In a Database Kamataka\_Sangam there are two tables with the instances given below :   |  |  | | --- | --- | |  |  |   Write SQL queries for the following :  (i) 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. |
|  |  |
| 10. | In a Database Multiplexes, there are two tables with the following data. Write SQL queries for (i) to (iii), which are based on TicketDetails and AgentDetails :   |  |  | | --- | --- | |  |  |   (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) |
|  |  |
| 11. | In a database there are two tables ‘CD’ and ‘TYPE’ as shown below :   |  |  | | --- | --- | |  |  |   (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. |
|  |  |
|  |  |
| 13. | Consider the tables ‘Flights’ & ‘Fares’ given below:  Flights   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **FNO** | **SOURCE** | **DEST** | **NO\_OF\_FL** | **NO\_OF\_STOP** |  | | 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’; |
|  |  |
| 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 ? |
|  |  |
| 15. | Consider the following table named “GARMENT”.    What is the degree and cardinality of ‘Garment’ table ? |
| 16. | In a Database, there are two tables given below :    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. |
|  |  |
| 17. | Consider the tables given below.   |  |  | | --- | --- | | Salesperson | Orders | |  |  |   i. The SalespersonId column in the "Salesperson" table is the KEY.The  SalespersonId column in the "Orders" table is a KEY.  ii. Can the ‘SalespersonId’ be set as the primary key in table ‘Orders’. Give reason. |
|  |  |
| 18. | With reference to the above given tables, Write commands in SQL for (i) and  (ii) and output for (iii) below:   1. To display SalespersonID, names, orderids and order amount of all salespersons. 2. 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. 3. SELECT Salesperson.SalespersonId, name, age, amount FROM Salesperson, orders WHERE Salesperson.salespersonId= Orders.salespersonId AND AGE BETWEEN 30 AND 45; |
|  |  |
| 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. |
|  |  |
| 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; |
|  |  |
| 21. | Consider the tables given below which are linked with each other and maintains referential integrity:  Table: SAP    Table : Store    With reference to the above given tables, write commands in SQL for (i) and (ii) and output for (iii) below:   1. To display the ItemCode,ItemName and ReceivedDate of all the items . 2. To display SAPID,ItemName,ItemStorageLocation of all the items whose Received date is after 2nd May 2016. 3. SELECT SAPID,ItemName,STOREID FROM SAP,Store WHERE SAP.ItemCode=Store.ItemCode AND StoreLocation = “Hauz Khas” 4. What will be the degree and cardinality of the cartesian product formed while combining both the above given tables ‘SAP’ and ‘Store’ ? 5. Sangeeta is not able to add a new record in the table ‘Store’ through the following query:   Insert into store values (1206,1006,’Karol Bagh’, ‘2016/07/25’);  Identify the error if there is any |
|  |  |

|  |  |
| --- | --- |
| 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. |
|  |  |
| 7. | Given below is the ‘Department’ table :  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 ? |
|  |  |