DBMS / SQL FAQs

Q. 1	**a) Are SQL commands case sensitive ?** **b) Are values enclosed within quotes case sensitive ?**
Ans.	a) No b) Yes
Q. 2	a) **Is it necessary for the column/s used in select statement along with a group function to be included in the group by clause ?** b) **Is it necessary for the column/s used in group by clause to be included in the select clause ?** c) **If the select statement includes only columns and no group functions; then can group by clause be used ?**

Ans.	a) Yes. The GROUP BY clause should contain all the columns in the SELECT list, except those used along with the Group functions.
	`SELECT Dept_Code, AVG(Staff_sal)`
	`FROM Staff_Master`
	`GROUP BY Dept_Code;`
	
	b) No. Any column other than selected column can also be placed in GROUP BY clause.
	`SELECT TOWN, COUNT(*)`
	`FROM PLAYERS`
	`GROUP BY PLAYERNO`
	
	c) Yes.
	`SELECT ename , sal`
	`FROM emp`
	`GROUP BY ename , sal`

Q. 3	**a) Can single row functions be used in the where clause ?** **b) Can single row functions be used in the having clause ?** **c) Can group functions be used in the having clause?**
Ans.	a) Yes. SELECT staff_code, hiredate FROM staff_master WHERE hiredate = TO_DATE ('September 08,1981','Month DD, YYYY'); b) No. we cannot use single row function in having clause Single row functions are the one who work on single row and return one output per row. For example, length and case conversion functions are single row functions. having clause can be used with group By function. Ex. CONCAT is a single row function. SELECT CONCAT (first_name, last_name) FROM employees WHERE salary = 5000; c) Yes. We can use group functions in having clause SELECT COUNT(Id), Country FROM Customer

	GROUP BY Country HAVING COUNT(Id) > 10
Q. 4	**What is the difference between count(*) and count ( )?**

Ans.	COUNT(*) counts every value i.e. counts every record though one of the cells has null value.
	COUNT(col_name) only counts the not null values of that particular column.
	
	`COUNT(*) FROM STUDENT_TABLE;`
	`COUNT(STD_ID) FROM STUDENT;`

Q. 5	**Can min and max functions be used with character and date columns ?**

Ans.	Yes. Min and max can be used with character and date columns.
	Ex: select max(order _date) from orders;
	Ex: select min(issue _date) from books where book_ code=001;
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	`Assume a column 'Data' in a table having following values :`
	`AA`
	`AB`
	`AC`
	Ex: select min(c_1) from t_1; //returns AA
	Ex: select max(Data) from t_1; // returns AC

Q. 6	**Identify the type of join by observing the syntax**
Ans.	a) Equi : `SELECT s.sturoll, s.sname, c.coursename FROM student s JOIN course c ON s.courseno = c.courseno;` b) Non equi : `SELECT Staff.Staffno, Staff.sname, sal, losal, hisal FROM Staff, Salgrade WHERE sal BETWEEN losal AND hisal;` c) Outer (right) : `SELECT s.sturoll, s.sname, c.coursename FROM student s JOIN course c WHERE s.courseno(+) = c.courseno;` d) Outer (left) : `SELECT s.sturoll, s.sname, c.coursename FROM student s JOIN course c WHERE s.coursen = c.courseno(+);` e) Cross join (Cartesian product) `SELECT s.sturoll, s.sname, c.coursename FROM student s, course c;`
Q. 7	**Consider the two related tables. Can the common column in both the tables have different names ?**

Ans.	Yes they can have different names.
	
	`SELECT BillNo, Amount`
	`FROM t1 JOIN t2`
	`ON t1.BillNo= t2.OrderNo`
	`ORDER BY Amount DESC;`

Q. 8	**If two tables are related,** **a) Can a foreign key column contains values not present in the primary key of the parent table column ?** **b) Can a foreign key column contain null values/duplicate values**
Ans.	a) No. as foreign key in some table is basically primary key in some other!! And if it happens then it is violating the primary key constraint. b) Yes. It can be null and duplicate. Null means leaving that cell empty.
Q. 9	**If two tables are related,** a) **Can you delete rows from parent table ?**

	b) **Can you delete rows from child table ?**
Ans.	a) No because removal from parent table will break the integrity rule of primary key b) Yes. Deletion from child table will only delete rows from Child table and will not impact the Parent table.
Q. 10	**a) Why use subqueries ?** **b) State the SQL commands within which subquery can be used ?**

Ans.	a) SQL subquery is usually added in the WHERE Clause of the SQL statement. Most of the time, a subquery is used when you know how to search for a value using a SELECT statement, but do not know the exact value in the database.
	
	If we don't write subqueries then we need to we write 2 queries for this example:
	
	`SELECT Dept_code FROM Department_Master WHERE Dept_name="Electrical";`
	
	`SELECT student_code, student_name FROM student_master where dept_code=40;`
	
	Now, if we use subqueries then,
	
	`SELECT student_code, student_name FROM student_master WHERE dept_code =(SELECT dept_code FROM department_master WHERE dept_name = "Electrical");`
	
	b) Subqueries can be used with the SELECT, INSERT, UPDATE, and DELETE statements along with the operators like =, <, >, >=, <=, IN, BETWEEN, etc.
	
	For "SELECT" :
	
	`SELECT * FROM CUSTOMERS WHERE ID IN (SELECT ID FROM CUSTOMERS WHERE SALARY > 4500);`
	
	For "INSERT":
	
	`INSERT INTO CUSTOMERS_MJ SELECT * FROM CUSTOMERS WHERE ID IN (SELECT ID FROM CUSTOMERS);`
	
	FOR "UPDATE":
	
	`UPDATE CUSTOMERS SET SALARY = SALARY * 0.25 WHERE AGE IN (SELECT AGE FROM CUSTOMERS_MJ WHERE AGE >= 27);`
	
	FOR "DELETE":
	
	`DELETE FROM CUSTOMERS WHERE AGE IN (SELECT AGE FROM CUSTOMERS_MJ WHERE AGE >= 27 );`

Q. 11	**a) Which are Single row subquery operators ?** **b) When to use multi row subquery operators ?** **c) Which are multi row subquery operators ?**
Ans.	a) Single row subquery operators returns a single value to the outer sql statement. The single row subquery operators are : =, >, >=, <, <=, <>

	`select ename, ecode, phoneno from employee where ecode = (select ecode from employee where ename = 'Alex');`
	
	b) They are used when there are more than one results matching with the requirement. The multi row subquery operators are : IN, ANY or ALL.
	
	c) A multiple row subquery returns one or more rows to the outer SQL statement.
	
	`select ename, ecode from employee where ecode in (select ecode from employee where elocation = 'Bangaluru');`

Q. 12	**a) Can order by clause can be used within subquery ?** **b) Can group by clause can be used within subquery ?**
Ans.	a) Purpose of order by is to provide sorting functionality to the resultant data and subquery/inner query data is not the final output rather the partial data which is going to be manipulated further using the outer query. So having an 'order by' in subquery doesn't make sense. b) Yes. group by clause can be used within subquery `select book_pub_author,book_name from book_master where book_pub_author in(select book_pub_author from book_master group by book_pub_author having count(book_code)>1);`
Q. 13	**Different variations of insert clause syntax (Provide an Example for each) :** **a) Basic insert of providing values for all columns** **b) Providing values only for few columns. Is the not null column mandatory to be included in this case ?** **c) Providing values for column having default value at table declaration time** **d) Providing values through user interaction** **e) Table already exists but is empty. How to insert values into this table from another existing table** **f) Table does not exist. You want to create a new table as well as populate it with rows from another table** **g) Can you provide a string value to a column with number datatype** **(Hint: Structure of Student table : stuId(primary key), stuFName(not null), stuLName(non mandatory), CourseNo(foreign key), stuCity (default-Pune))**

Ans.	a) `INSERT INTO student VALUES(111,'Ravi', 'Pradhan', 01, 'Ooty');`
	b) Yes. Not null column is compulsory. `INSERT INTO student(stuId, stuFName, CourseNo, stuCity) VALUES (111,'Ravi', 01, 'Pune')`
	c) `INSERT INTO student(stuId, stuFName, CourseNo) VALUES (111,'Ravi', 01)`
	d) `INSERT INTO employee VALUES(&empno,'&ename','&job',&mgr,'&hiredate',&sal,&comm,&deptno);`
	`Enter value for empno: 1000`
	`Enter value for ename: Allen`
	`Enter value for job: Clerk`
	`Enter value for mgr: 1001`
	`Enter value for hiredate: 12-jan-01`
	`Enter value for sal: 3000`

	Enter value for comm: 2
	Enter value for deptno: 10
	e) INSERT INTO employee(empno,ename,job,mgr,hiredate,sal,comm,deptno) SELECT * FROM emp;
	f) SQL> CREATE TABLE employee(EMPNO NUMBER(4) NOT NULL, ENAME VARCHAR2(10), JOB VARCHAR2(50), MGR NUMBER(4), HIREDATE DATE, SAL NUMBER(7,2), COMM NUMBER(7,2), DEPTNO NUMBER(2));
	g) No.
	SQL> insert into student_master values(&student_code);
	Enter value for student_code: amit
	old 1: insert into student_master values(&student_code)
	new 1: insert into student_master values(amit)
	insert into student_master values(amit)
	*
	ERROR at line 1:
	ORA-00947: not enough values

Q. 14	**Syntax of update clause (Provide an Example for each):** **a) Is it possible to update more than one column at a time** **b) syntax of using update clause with null and not null clause**
Ans.	a) UPDATE student SET stuLName ='Aarti', stuCity = 'Bangalore' WHERE stuId=144; b) UPDATE StudentMarks SET grade= NULL WHERE attendance = "AB";
Q. 15	**Syntax of delete command (Provide an Example for each) :** **a) Can delete command be used to delete few columns from the table** **b) Can delete command be used to delete few rows from the table** **c) Can a where clause be given along with truncate command**
Ans.	a) No, Delete command only used to delete rows from table. We use Alter command to delete column. (Ex- ALTER TABLE table_name DROP column_name ;) b) DELETE FROM table_name [WHERE condition] ;(Ex- DELETE FROM employee WHERE id = 100 ;) c) No, truncate cannot be used with where clause. Truncate simply de-allocates all the pages belonging to a table (Ex- TRUNCATE TABLE table_name ;)