Branch : CSE & IT   Batch : English

Database Management System
Query Language

[MCQ]

1. Consider the following keywords.

   A.   SELECT
   B.   TOP
   C.   DISTINCT
   D.   FROM
   E.   WHERE
   F.   GROUP BY
   G.   HAVING   H.   ORDER BY

The above keywords are used in the given SQL query below.

SLECT TOP NumberOfRows DISTINCT Col1, Col2
FROM TableNameX, TableNameY
GROUP BY ColumnName
HAVING expression
ORDER BY ColumnName;

Which of the following is the correct query execution order according to SQL Standard?

(a) D E F G A H B C
(b) D E F G A C H B
(c) D E F G A B C H
(d) A D E F G H C B

[MSQ]

2. Consider the following employee table
Employees (EMPID, EmpName, Sal, DeptID, ManagerID) assume that EMPID is primary key of relation. which of the following SELECT statements is/are invalid?

(a) SELECT ManagerID, DeptID FROM employees;
(b) SELECT ManagerID, DISTINCT DeptID FROM employees;
(c) SELECT DISTINCT ManagerID, DISTINCT DeptID FROM employees;
(d) SELECT DISTINCT ManagerID, DeptID FROM employees;

[MSQ]

3. Consider the following product relation
Products (PID, PName, Cost)
Assume that PID is a primary key of relation. Which SELECT statement should we used to limit the display of product information to the product having price/cost less than 50?

(a) SELECT PID, PName FROM Products WHERE Cost < 50;
(b) SELECT PID, PName FROM Products WHERE Cost< = 50;
(c) SELECT PID, PName FROM Products WHERE PID IN (SELECT PID FROM Products WHERE Cost <50);
(d) SELECT PID, PName FROM Products GROUP BY PID Having Cost < 50;

[MCQ]

4. The Employees table contains these columns

empID   NUMBERS (4)
LastName   VARCHAR (25)
JobID   VARCHAR (10)

Suppose that, you want to search for string that contains 'Negi' in the LastName column which SQL statement will be used?

(a) SELECT empID, LastName, JobID FROM employees WHERE LastName LIKE '%Negi';
(b) SELECT empID, lastName, JobID FROM employees WHERE LastName = 'Negi_%';
(c) SELECT empID, lastName, JobID FROM employees WHERE LastName LIKE 'Negi';
(d) None of these

[NAT]

5. Consider a relation A(P,Q) currently has tuples {(1, 2), (1, 3), (3, 4) } and relation B(Q, R) currently has {(2, 5), (4, 6), (7, 8)}. Then the number of tuples in the result of the SQL query: SELECT * FROM A NATURAL OUTER JOIN B; is_____?

[MSQ]

6. Which of the following statement is/are true about constraints?
   (a) The constraints is applied only to INSERT operation into table.
   (b) A foreign key can't contain NULL values.
   (c) A column with the unique constraint can store NULLS.
   (d) We can have more than one column in a table as a part of primary key.

[MCQ]

7. Consider the following statements
   S₁: An INSERT statement can add multiple rows per execution to a table.
   S₂: An UPDATE Statement can modify multiple rows based on multiple condition on a table.
   Choose the correct statements.
   (a) Only S₁ is true
   (b) Only S₂ is true
   (c) Both S₁ is S₂ are true
   (d) Both S₁ and S₂ are false

[MCQ]

8. Consider the following statements.
   S1: A DELETE statement can remove rows based on a single condition on a table
   S2: An INSERT statement can add a single row based on multiple condition on a table.
   Choose the correct statements
   (a) Only S₁ is true
   (b) Only S₂ is true
   (c) Both S₁ and S₂ are true
   (d) Both S₁ and S₂ are false

[MSQ]

9. Which of the below statement are true regarding the WHERE and HAVING clause in a SQL statement?
   (a) WHERE and HAVHIG clause can't be used together in SQL Statement.
   (b) The HAVING clause condition can have aggregate function.
   (c) The WHERE clause is used to exclude rows before the grouping of data.
   (d) The HAVING clause is used to exclude one or more aggregated results after grouping data.

[MCQ]

10. Given the database schema A(P,Q,R) which of the following SQL query can be used to test whether the functional dependency P→R holds on relation A?
    (a) Select P from A group by P having count (distinct R) >1
    (b) Selects P from A group by A having count (distinct R) >1
    (c) Select R from A group by P having count (distinct R) >1
    (d) None of the above

Answer Key

1. (b)
2. (b, c)
3. (a, c)
4. (c)
5. (4)

6. (c, d)
7. (c)
8. (c)
9. (b, c, d)
10. (a)

Hints & Solutions

1. **(b)**

The correct query execution order.

FROM	→	D
WHERE	→	E
GROUP BY	→	F
HAVING	→	G
SELECT	→	A
DISTINCT	→	C
ORDER BY	→	H
TOP	→	B

So, correct order of execution is DEFGACHB i.e… option (b).

2. **(b, c)**

Option b & c are having invalid SELECT statement, because we cannot apply DISTINCT keyword on attribute basis, DISTINCT keyword chooses a distinct row.

3. **(a & c)**

Option (a) is correct because this SQL statement displays the product information of product with cost less than 50.

Option (b) is incorrect because it will return product information of product with cost equal to 50.

Option (c) is correct SQL statement because in this we used nested SQL query.

First, we find PID of product whose cost is less than 50, and then we compare PID with the result of inner query.

Option (d) is incorrect SQL statement because it cannot select non aggregate column PName in SELECT clause.

4. **(c)**

The LIKE command is used in a WHERE clause to search for a specified pattern in a column.

You can use two wildcards with LIKE:

- % Represents zero, one, or multiple characters
- _ -Represents a single character

Option (a)

The following SQL selects all Lastname ending with "Negi".

Option (b):

The following SQL selects all Lastname starting with "Negi".

Option (c):

The following SQL selects all Lastname contains with "Negi".

Or

The equivalent SQL query:

SELECT empID, lastName, JobID FROM employees WHERE LastName LIKE '%Negi%';

5. **(4)**

A		B		A⋈B		
P	Q	Q	R	P	Q	R
1	2	2	5	1	2	5
1	3	4	6	3	4	6
3	4	7	8	1	3	-
				-	7	8

Therefore the number of tuples in the results are 4.

6. **(c, d)**

(a) **False;** we can also apply for an update operation into table.

(b) **False;** A foreign key can contain NULL values as well

(c) **True;** A column with the UNIQUE constraint can store NULL values but not duplicate value.

(d) **True;** a primary key can also be a composite key.

7. **(c)**

S_1: **True;** An INSERT statement can add multiple, rows per execution to a table by using the following SQL query.

INSERT INTO table 2 (col1, col2, col3, ….) SELECT col1, col2, col3,…

S_2: **True;** An UPDATE statement can modify multiple rows based on multiple conditions on table.

8. **(c)**

S_1: **True;** DELETE statement can remove rows based no/single/multiple condition on a table.

S_2: **True;** An insert statement can add a single row based on multiple conditions on a table.

9. **(b, c, d)**
   (a) False; A query can have both WHERE and HAVING clauses.
   (b) True; The HAVING clause condition can have aggregate function.

   (c) True; WHERE clause is used to exclude rows before the grouping of data.

   (d) True; The HAVING clause is used to exclude aggregated results after grouping data.

10. **(a)**
    If the query in option a returns non null output, then the dependency does not hold. Hence (a) option is correct.