1. Aggregate functions are functions that take a \_\_\_\_\_\_\_\_\_\_\_ as input and return a single value.  
   a) Collection of values  
   b) Single value  
   c) Aggregate value  
   d) Both Collection of values & Single value

Answer: a

1. SELECT \_\_\_\_\_\_\_\_\_\_

FROM instructor

WHERE dept name= ’Comp. Sci.’;

Which of the following should be used to find the mean of the salary ?  
a) Mean(salary)  
b) Avg(salary)  
c) Sum(salary)  
d) Count(salary)

Answer: b  
Explanation: Avg() is used to find the mean of the values.

1. SELECT COUNT (\_\_\_\_ ID)

FROM teaches

WHERE semester = ’Spring’ AND YEAR = 2010;

If we do want to eliminate duplicates, we use the keyword \_\_\_\_\_\_in the aggregate expression.  
a) Distinct  
b) Count  
c) Avg  
d) Primary key

Answer: a  
Explanation: Distinct keyword is used to select only unique items from the relation.

1. All aggregate functions except \_\_\_\_\_ ignore null values in their input collection.  
   a) Count(attribute)  
   b) Count(\*)  
   c) Avg  
   d) Sum

Answer: b  
Explanation: \* is used to select all values including null.

1. A Boolean data type that can take values true, false, and\_\_\_\_\_\_\_\_  
   a) 1  
   b) 0  
   c) Null  
   d) Unknown

Answer: d  
Explanation: Unknown values do not take null value but it is not known.

1. The \_\_\_\_ connective tests for set membership, where the set is a collection of values produced by a select clause. The \_\_\_\_ connective tests for the absence of set membership.  
   a) Or, in  
   b) Not in, in  
   c) In, not in  
   d) In, or

Answer: c  
Explanation: In checks, if the query has the value but not in checks if it does not have the value.

1. Which of the following should be used to find all the courses taught in the Fall 2009 semester but not in the Spring 2010 semester .

a)

SELECT DISTINCT course id

FROM SECTION

WHERE semester = ’Fall’ AND YEAR= 2009 AND

course id NOT IN (SELECT course id

FROM SECTION

WHERE semester = ’Spring’ AND YEAR= 2010);

b)

SELECT DISTINCT course\_id

FROM instructor

WHERE name NOT IN (’Fall’, ’Spring’);

c)

(SELECT course id

FROM SECTION

WHERE semester = ’Spring’ AND YEAR= 2010)

d)

SELECT COUNT (DISTINCT ID)

FROM takes

WHERE (course id, sec id, semester, YEAR) IN (SELECT course id, sec id, semester, YEAR

FROM teaches

WHERE teaches.ID= 10101);

Answer: a

1. The phrase “greater than at least one” is represented in SQL by \_\_\_\_\_  
   a) < all  
   b) < some  
   c) > all  
   d) > some

Answer: d  
Explanation: >some takes atlest one value above it

1. Which of the following is used to find all courses taught in both the Fall 2009 semester and in the Spring 2010 semester .

a)

SELECT course id

FROM SECTION AS S

WHERE semester = ’Fall’ AND YEAR= 2009 AND

EXISTS (SELECT \*

FROM SECTION AS T

WHERE semester = ’Spring’ AND YEAR= 2010 AND

S.course id= T.course id);

b)

SELECT name

FROM instructor

WHERE salary > SOME (SELECT salary

FROM instructor

WHERE dept name = ’Biology’);

c)

SELECT COUNT (DISTINCT ID)

FROM takes

WHERE (course id, sec id, semester, YEAR) IN (SELECT course id, sec id, semester, YEAR

FROM teaches

WHERE teaches.ID= 10101);

d)

(SELECT course id

FROM SECTION

WHERE semester = ’Spring’ AND YEAR= 2010)

Answer: a

1. We can test for the nonexistence of tuples in a subquery by using the \_\_\_\_\_ construct.  
   a) Not exist  
   b) Not exists  
   c) Exists  
   d) Exist

Answer: b  
Explanation: Exists is used to check for the existence of tuples.

1. SELECT dept\_name, ID, avg (salary)

FROM instructor

GROUP BY dept\_name;

This statement IS erroneous because

a) Avg(salary) should not be selected  
b) Dept\_id should not be used in group by clause  
c) Misplaced group by clause  
d) Group by clause is not valid in this query

Answer: b  
Explanation: Any attribute that is not present in the group by clause must appear only inside an aggregate function if it appears in the select clause, otherwise the query is treated as erroneous.

1. SQL applies predicates in the \_\_\_\_\_\_\_ clause after groups have been formed, so aggregate functions may be used.  
   a) Group by  
   b) With  
   c) Where  
   d) Having

Answer: b  
Explanation: The with clause provides away of defining a temporary relation whose definition is available only to the query in which the with clause occurs.

1. Aggregate functions can be used in the select list or the\_\_\_\_\_\_\_clause of a select statement or subquery. They cannot be used in a \_\_\_\_\_\_ clause.  
   a) Where, having  
   b) Having, where  
   c) Group by, having  
   d) Group by, where

Answer: b  
Explanation: To include aggregate functions having clause must be included after where.

1. The \_\_\_\_\_\_\_\_ keyword is used to access attributes of preceding tables or subqueries in the from clause.  
   a) In  
   b) Lateral  
   c) Having  
   d) With

Answer: b

Explanation:

Eg : SELECT name, salary, avg salary

FROM instructor I1, lateral (SELECT avg(salary) AS avg salary

FROM instructor I2

WHERE I2.dept name= I1.dept name);

Without the lateral clause, the subquery cannot access the correlation variable I1 from the outer query.

1. Which of the following creates a temporary relation for the query on which it is defined?  
   a) With  
   b) From  
   c) Where  
   d) Select

Answer: a  
Explanation: The with clause provides a way of defining a temporary relation whose definition is available only to the query in which the with clause occurs.

1. WITH max\_budget (VALUE) AS

(SELECT MAX(budget)

FROM department)

SELECT budget

FROM department, max\_budget

WHERE department.budget = MAX budget.value;

In the query given above which one of the following is a temporary relation?  
a) Budget  
b) Department  
c) Value  
d) Max\_budget

Answer: d  
Explanation: With clause creates a temporary relation.

1. Subqueries cannot:  
   a) Use group by or group functions  
   b) Retrieve data from a table different from the one in the outer query  
   c) Join tables  
   d) Appear in select, update, delete, insert statements.

Answer: c

1. Which of the following is not an aggregate function?  
   a) Avg  
   b) Sum  
   c) With  
   d) Min

Answer: c  
Explanation: With is used to create temporary relation and its not an aggregate function.

1. The EXISTS keyword will be true if:  
   a) Any row in the subquery meets the condition only  
   b) All rows in the subquery fail the condition only  
   c) Both of these two conditions are met  
   d) Neither of these two conditions is met

Answer: a  
Explanation: EXISTS keyword checks for existance of a condition.

1. How can you find rows that do not match some specified condition?  
   a) EXISTS  
   b) Double use of NOT EXISTS  
   c) NOT EXISTS  
   d) None of the mentioned

Answer: b