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## Question Bank

**Class: F.Y.B. Sc.CS**

**Semester: I**

**Subject: Database System**

### UNIT I

1. An \_\_\_\_\_ is a set of entities of the same type that share the same properties, or attributes.
  - a) Entity set
  - b) Attribute set
  - c) Relation set
  - d) Entity model
  
2. Entity is a \_\_\_\_\_.
  - a) Object of relation
  - b) Present working model
  - c) Thing in real world
  - d) Model of relation
  
3. The descriptive property possessed by each entity set is \_\_\_\_\_.
  - a) Entity
  - b) Attribute
  - c) Relation
  - d) Model
  
4. The function that an entity plays in a relationship is called that entity's \_\_\_\_\_.
  - a) Participation
  - b) Position
  - c) Role
  - d) Instance
  
5. The attribute *name* could be structured as an attribute consisting of first name, middle initial, and last name. This type of attribute is called
  - a) Simple attribute

- b) Composite attribute
- c) Multivalued attribute
- d) Derived attribute

6. The attribute AGE is calculated from DATE\_OF\_BIRTH. The attribute AGE is

- a) Single valued
- b) Multi valued
- c) Composite
- d) Derived

7. Not applicable condition can be represented in relation entry as

- a) NA
- b) 0
- c) NULL
- d) Blank Space

8. Which of the following can be a multivalued attribute?

- a) Phone\_number
- b) Name
- c) Date\_of\_birth
- d) All of the mentioned

9. Which of the following is a single valued attribute

- a) Register\_number
- b) Address
- c) SUBJECT\_TAKEN
- d) Reference

10. In a relation between the entities the type and condition of the relation should be specified. That is called as \_\_\_\_\_ attribute.

- a) Descriptive
- b) Derived
- c) Recursive
- d) Relative

11. \_\_\_\_\_ express the number of entities to which another entity can be associated via a relationship set.

- a) Mapping Cardinality
- b) Relational Cardinality
- c) Participation Constraints

d) None of the mentioned

12. An entity in A is associated with at most one entity in B, and an entity in B is associated with at most one entity in A. This is called as

- a) One-to-many
- b) One-to-one
- c) Many-to-many
- d) Many-to-one

13. An entity in A is associated with at most one entity in B. An entity in B, however, can be associated with any number (zero or more) of entities in A.

- a) One-to-many
- b) One-to-one
- c) Many-to-many
- d) Many-to-one

14. Data integrity constraints are used to:

- a) Control who is allowed access to the data
- b) Ensure that duplicate records are not entered into the table
- c) Improve the quality of data entered for a specific property
- d) Prevent users from changing the values stored in the table

15. Establishing limits on allowable property values, and specifying a set of acceptable, predefined options that can be assigned to a property are examples of:

- a) Attributes
- b) Data integrity constraints
- c) Method constraints
- d) Referential integrity constraints

16. Which of the following can be addressed by enforcing a referential integrity constraint?

- a) All phone numbers must include the area code
- b) Certain fields are required (such as the email address, or phone number) before the record is accepted
- c) Information on the customer must be known before anything can be sold to that customer
- d) Then entering an order quantity, the user must input a number and not some text (i.e., 12 rather than 'a dozen')

17. \_\_\_\_\_ is a special type of integrity constraint that relates two relations & maintains consistency across the relations.

- a) Entity Integrity Constraints

- b) Referential Integrity Constraints
- c) Domain Integrity Constraints
- d) Domain Constraints

18. Which one of the following uniquely identifies the elements in the relation?

- a) Secondary Key
- b) Primary key
- c) Foreign key
- d) Composite key

19. Drop Table cannot be used to drop a table referenced by a \_\_\_\_\_ constraint.

- a) Local Key
- b) Primary Key
- c) Composite Key
- d) Foreign Key

20. \_\_\_\_\_ is preferred method for enforcing data integrity

- a) Constraints
- b) Stored Procedure
- c) Triggers
- d) Cursors

21. A \_\_\_\_\_ indicates an absent value that may exist but be unknown or that may not exist at all.

- a) Empty tuple
- b) New value
- c) Null value
- d) Old value

22. If the attribute phone number is included in the relation all the values need not be entered into the phone number column. This type of entry is given as

- a) 0
- b) –
- c) Null
- d) Empty space

23. The predicate in a where clause can involve Boolean operations such as and. The result of true and unknown is \_\_\_\_\_ false and unknown is \_\_\_\_\_ while unknown and unknown is \_\_\_\_\_

- a) Unknown, unknown, false
- b) True, false, unknown
- c) True, unknown, unknown

d) Unknown, false, unknown

24.

```
SELECT name
FROM instructor
WHERE salary IS NOT NULL;
```

Selects

- a) Tuples with null value
- b) Tuples with no null values
- c) Tuples with any salary
- d) All of the mentioned

25. In an employee table to include the attributes whose value always have some value which of the following constraint must be used?

- a) Null
- b) Not null
- c) Unique
- d) Distinct

26. Using the \_\_\_\_\_ clause retains only one copy of such identical tuples.

- a) Null
- b) Unique
- c) Not null
- d) Distinct

27.

```
CREATE TABLE employee (id INTEGER,name VARCHAR(20),salary NOT NULL);
INSERT INTO employee VALUES (1005,Rach,0);
INSERT INTO employee VALUES (1007,Ross, );
```

INSERT INTO employee VALUES (1002,Joey,335);

Some of these insert statements will produce an error. Identify the statement.

- a) Insert into employee values (1005,Rach,0);
- b) Insert into employee values (1002,Joey,335);
- c) Insert into employee values (1007,Ross, );
- d) insert into employee values (1002,Joey,333);

28. The primary key must be

- a) Unique
- b) Not null
- c) Both Unique and Not null
- d) Either Unique or Not null

29. You attempt to query the database with this command:

```
SELECT nvl (100 / quantity, NONE)
```

```
FROM inventory;
```

Why does this statement cause an error when QUANTITY values are null?

- a) The expression attempts to divide by a null value
- b) The data types in the conversion function are incompatible
- c) The character string none should be enclosed in single quotes ( ' ' )
- d) A null value used in an expression cannot be converted to an actual value

30. The result of \_\_\_\_\_ unknown is unknown.

- a) Xor
- b) Or
- c) And
- d) Not

31. Which of the following gives a logical structure of the database graphically?

- a) Entity-relationship diagram
- b) Entity diagram
- c) Database diagram
- d) Architectural representation

32. The entity relationship set is represented in E-R diagram as

- a) Double diamonds
- b) Undivided rectangles

- c) Dashed lines
- d) Diamond

33. The Rectangles divided into two parts represents

- a) Entity set
- b) Relationship set
- c) Attributes of a relationship set
- d) Primary key

34. Consider a directed line(->) from the relationship set advisor to both entity sets instructor and student. This indicates \_\_\_\_\_ cardinality

- a) One to many
- b) One to one
- c) Many to many
- d) Many to one

35. We indicate roles in E-R diagrams by labeling the lines that connect \_\_\_\_\_ to

- a) Diamond , diamond
- b) Rectangle, diamond
- c) Rectangle, rectangle
- d) Diamond, rectangle

36. An entity set that does not have sufficient attributes to form a primary key is termed a

- a) Strong entity set
- b) Variant set
- c) Weak entity set
- d) Variable set

37. For a weak entity set to be meaningful, it must be associated with another entity set, called the

- a) Identifying set
- b) Owner set
- c) Neighbour set
- d) Strong entity set

38. Weak entity set is represented as

- a) Underline
- b) Double line

- c) Double diamond
- d) Double rectangle

39. If you were collecting and storing information about your music collection, an album would be considered a(n) \_\_\_\_\_

- a) Relation
- b) Entity
- c) Instance
- d) Attribute

40. What term is used to refer to a specific record in your music database; for instance; information stored about a specific album?

- a) Relation
- b) Instance
- c) Table
- d) Column

## UNIT II

41. The union operation is represented by

- a)  $\cap$
- b)  $\cup$
- c)  $-$
- d)  $*$

42. The intersection operator is used to get the \_\_\_\_\_ tuples.

- a) Different
- b) Common
- c) All
- d) Repeating

43. The union operation automatically \_\_\_\_\_ unlike the select clause.

- a) Adds tuples
- b) Eliminates unique tuples
- c) Adds common tuples
- d) Eliminates duplicate

44. If we want to retain all duplicates, we must write \_\_\_\_\_ in place of union.

- a) Union all
- b) Union some
- c) Intersect all
- d) Intersect some

45.

```
(SELECT course id
```

```
FROM SECTION
```

```
WHERE semester = 'Fall' AND YEAR= 2009)
```

```
EXCEPT
```

```
(SELECT course id
```

```
FROM SECTION
```

```
WHERE semester = 'Spring' AND YEAR= 2010);
```

This query displays

- a) Only tuples from second part
- b) Only tuples from the first part which has the tuples from second part
- c) Tuples from both the parts
- d) Tuples from first part which do not have second part

46. For like predicate which of the following is true.

- i) % matches zero OF more characters.
  - ii) \_ matches exactly one CHARACTER.
- a) i-only
  - b) ii-only
  - c) i & ii
  - d) None of the mentioned

47. The number of attributes in relation is called as its

- a) Cardinality
- b) Degree
- c) Tuples
- d) Entity

48. \_\_\_\_\_ clause is an additional filter that is applied to the result.

- a) Select
- b) Group-by
- c) Having
- d) Order by

49. \_\_\_\_\_ joins are SQL server default

- a) Outer
- b) Inner
- c) Equi
- d) None of the mentioned

50. The \_\_\_\_\_ is essentially used to search for patterns in target string.

- a) Like Predicate
- b) Null Predicate
- c) In Predicate
- d) Out Predicate

51.

Name
Annie
Bob
Callie
Derek

Which of these query will display the the table given above ?

- a) Select employee from name
- b) Select name
- c) Select name from employee
- d) Select employee

52. Here which of the following displays the unique values of the column?

```
SELECT _____ dept_name  
FROM instructor;
```

- a) All
- b) From
- c) Distinct
- d) Name

53. The \_\_\_\_\_ clause allows us to select only those rows in the result relation of the \_\_\_\_\_ clause that satisfy a specified predicate.

- a) Where, from
- b) From, select
- c) Select, from
- d) From, where

54. The query given below will not give an error. Which one of the following has to be replaced to get the desired output?

```
SELECT ID, name, dept name, salary * 1.1  
WHERE instructor;
```

- a) Salary\*1.1
- b) ID
- c) Where
- d) Instructor

55. The \_\_\_\_\_ clause is used to list the attributes desired in the result of a query.

- a) Where
- b) Select
- c) From
- d) Distinct

56. This Query can be replaced by which one of the following?

```
SELECT name, course_id  
FROM instructor, teaches  
WHERE instructor_ID= teaches_ID;
```

- a) Select name, course\_id from teaches, instructor where instructor\_id=course\_id;
- b) Select name, course\_id from instructor natural join teaches;
- c) Select name, course\_id from instructor;
- d) Select course\_id from instructor join teaches;

57.

```
SELECT * FROM employee WHERE salary>10000 AND dept_id=101;
```

Which of the following fields are displayed as output?

- a) Salary, dept\_id
- b) Employee
- c) Salary
- d) All the field of employee relation

58.

Employee_id	Name	Salary
1001	Annie	6000
1009	Ross	4500
1018	Zeith	7000

This is Employee table.

Which of the following employee\_id will be displayed for the given query?

```
SELECT * FROM employee WHERE employee_id>1009;
```

- a) 1009, 1001, 1018
- b) 1009, 1018
- c) 1001
- d) 1018

59. Which of the following statements contains an error?

- a) Select \* from emp where empid = 10003;
- b) Select empid from emp where empid = 10006;
- c) Select empid from emp;
- d) Select empid where empid = 1009 and lastname = 'GELLER';

60. In the given query which of the keyword has to be inserted?

```
INSERT INTO employee _____ (1002,Joey,2000);
```

- a) Table
- b) Values
- c) Relation
- d) Field

61. Which one of the following is used to define the structure of the relation, deleting relations and relating schemas?

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

62. Which one of the following provides the ability to query information from the database and to insert tuples into, delete tuples from, and modify tuples in the database?

- a) DML(Data Manipulation Language)
- b) DDL(Data Definition Language)
- c) Query
- d) Relational Schema

63.CREATE TABLE employee (name VARCHAR, id INTEGER)

What type of statement is this?

- a) DML
- b) DDL
- c) View
- d) Integrity constraint

64.

SELECT \* FROM employee

What type of statement is this?

- a) DML
- b) DDL
- c) View
- d) Integrity constraint

65. The basic data type char(n) is a \_\_\_\_\_ length character string and varchar(n) is \_\_\_\_\_ length character.

- a) Fixed, equal
- b) Equal, variable
- c) Fixed, variable
- d) Variable, equal

66. An attribute A of datatype varchar(20) has the value "Avi". The attribute B of datatype char(20) has value "Reed". Here attribute A has \_\_\_\_\_ spaces and attribute B has \_\_\_\_\_ spaces.

- a) 3, 20
- b) 20, 4
- c) 20, 20
- d) 3, 4

67. To remove a relation from an SQL database, we use the \_\_\_\_\_ command.

- a) Delete
- b) Purge
- c) Remove
- d) Drop table

68.

DELETE FROM r; //r - relation

This command performs which of the following action?

- a) Remove relation
- b) Clear relation entries
- c) Delete fields
- d) Delete rows

69.

INSERT INTO instructor VALUES (10211, 'Smith', 'Biology', 66000);

What type of statement is this?

- a) Query
- b) DML
- c) Relational
- d) DDL

70. Updates that violate \_\_\_\_\_ are disallowed.

- a) Integrity constraints
- b) Transaction control
- c) Authorization
- d) DDL constraints

71. In the \_\_\_\_\_ normal form, a composite attribute is converted to individual attributes.

- a) First
- b) Second
- c) Third
- d) Fourth

72. A table on the many side of a one to many or many to many relationship must:

- a) Be in Second Normal Form (2NF)
- b) Be in Third Normal Form (3NF)
- c) Have a single attribute key
- d) Have a composite key

73. Tables in second normal form (2NF):

- a) Eliminate all hidden dependencies
- b) Eliminate the possibility of a insertion anomalies
- c) Have a composite key
- d) Have all non key fields depend on the whole primary key

74. Which-one of the following statements about normal forms is FALSE?

- a) BCNF is stricter than 3 NF
- b) Lossless, dependency -preserving decomposition into 3 NF is always possible
- c) Loss less, dependency – preserving decomposition into BCNF is always possible
- d) Any relation with two attributes is BCNF

75. Functional Dependencies are the types of constraints that are based on\_\_\_\_\_

- a) Key
- b) Key revisited
- c) Superset key
- d) Foreign Key

76. Which is a bottom-up approach to database design that design by examining the relationship between attributes:

- a) Functional dependency
- b) Database modeling
- c) Normalization
- d) Decomposition

77. Which forms simplifies and ensures that there are minimal data aggregates and repetitive groups:

- a) 1NF
- b) 2NF
- c) 3NF
- d) BCNF

78. Which forms has a relation that possesses data about an individual entity:

- a) 2NF
- b) 3NF
- c) 4NF
- d) 5NF

79. Which forms are based on the concept of functional dependency:

- a) 1NF
- b) 2NF
- c) 3NF
- d) 4NF

80.

Empdt1(empcode, name, street, city, state, pincode).

For any pincode, there is only one city and state. Also, for given street, city and state, there is just one pincode. In normalization terms, empdt1 is a relation in

- a) 1 NF only
- b) 2 NF and hence also in 1 NF
- c) 3NF and hence also in 2NF and 1NF
- d) BCNF and hence also in 3NF, 2NF and 1NF

81. Relational Algebra is a \_\_\_\_\_ query language that takes two relations as input and produces another relation as an output of the query.

- a) Relational
- b) Structural
- c) Procedural
- d) Fundamental

82. Which of the following is a fundamental operation in relational algebra?

- a) Set intersection
- b) Natural join
- c) Assignment
- d) union

83. Which of the following is used to denote the selection operation in relational algebra?

- a) Pi (Greek)
- b) Sigma (Greek)
- c) Lambda (Greek)
- d) Omega (Greek)

84. For select operation the \_\_\_\_\_ appear in the subscript and the \_\_\_\_\_ argument appears in the paranthesis after the sigma.

- a) Predicates, relation
- b) Relation, Predicates
- c) Operation, Predicates
- d) Relation, Operation

85. The \_\_\_\_\_ operation, denoted by  $-$ , allows us to find tuples that are in one relation but are not in another.

- a) Union
- b) Set-difference
- c) Difference
- d) Intersection

86. Which is a unary operation:

- a) Selection operation
- b) Primitive operation
- c) Projection operation
- d) Generalized selection

87. Which is a join condition contains an equality operator:

- a) Equijoins
- b) Cartesian
- c) Natural
- d) Left

88. In precedence of set operators, the expression is evaluated from

- a) Left to left
- b) Left to right
- c) Right to left
- d) From user specification

89. Which of the following is not outer join?

- a) Left outer join
- b) Right outer join
- c) Full outer join
- d) Front join

90. The assignment operator is denoted by

- a) ->
- b) <-
- c) =
- d) ==

91. Which function is used to find the count of distinct departments?

- a) Dist
- b) Distinct
- c) Count(distinct ID)
- d) Count, Dist

92. Which function is used to identify the title with Least scope?

- a) Min(Credits)
- b) Max(Credits)
- c) Min(title)
- d) Min(Salary)

93.

- a) Alter table teaches include Name;
- b) Alter table teaches add Name;
- c) Alter table teaches add Name varchar;
- d) Alter table teaches add Name varchar(20);

94. To replace the relation section with some other relation the initial step to be carried out is

- a) Delete section;
- b) Drop section;
- c) Delete from section;
- d) Replace section new\_table ;

95. A Delete command operates on \_\_\_\_\_ relation.

- a) One
- b) Two
- c) Several
- d) Null

96.

Delete from r where P;

The above command

- a) Deletes a particular tuple from the relation
- b) Deletes the relation
- c) Clears all entries from the relation
- d) All of the mentioned

97. Which one of the following deletes all the entries but keeps the structure of the relation.

- a) Delete from r where P;
- b) Delete from instructor where dept name= 'Finance';
- c) Delete from instructor where salary between 13000 and 15000;
- d) Delete from instructor;

98.

UPDATE instructor

\_\_\_\_\_ salary= salary \* 1.05;

Fill in with correct keyword to update the instructor relation.

- a) Where
- b) Set
- c) In
- d) Select

99. \_\_\_\_\_ are useful in SQL update statements, where they can be used in the set clause.

- a) Multiple queries
- b) Sub queries
- c) Update
- d) Scalar subqueries

100. The problem of ordering the update in multiple updates is avoided using

- a) Set
- b) Where
- c) Case
- d) When

101. We can use the following three rules to find logically implied functional dependencies. This collection of rules is called

- a) Axioms
- b) Armstrong's axioms
- c) Armstrong
- d) Closure

102. Which of the following is not Armstrong's Axiom?

- a) Reflexivity rule
- b) Transitivity rule
- c) Pseudotransitivity rule
- d) Augmentation rule

103. The relation employee(ID,name,street,Credit,street,city,salary) is decomposed into

employee1 (ID, name)

employee2 (name, street, city, salary)

This type of decomposition is called

- a) Lossless decomposition
- b) Lossless-join decomposition
- c) All of the mentioned
- d) None of the mentioned

104. Inst\_dept (ID, name, salary, dept name, building, budget) is decomposed into instructor (ID, name, dept name, salary) department (dept name, building, budget) This comes under

- a) Lossy-join decomposition
- b) Lossy decomposition
- c) Lossless-join decomposition
- d) Both Lossy and Lossy-join decomposition

105. There are two functional dependencies with the same set of attributes on the left side of the arrow:

A->BC

A->B

This can be combined as

a) A->BC

b) A->B

c) B->C

d) None of the mentioned

106. Consider a relation R(A,B,C,D,E) with the following functional dependencies:

ABC -> DE and

D -> AB

The number of superkeys of R is:

a) 2

b) 7

c) 10

d) 12

107. Suppose we wish to find the ID's of the employees that are managed by people who are managed by the employee with ID 123. Here are two possible queries:

I.SELECT ee.empID

FROM Emps ee, Emps ff

WHERE ee.mgrID = ff.empID AND ff.mgrID = 123;

II.SELECT empID

FROM Emps

WHERE mgrID IN

(SELECT empID FROM Emps WHERE mgrID = 123);

Which, if any, of the two queries above will correctly (in SQL2) get the desired set of employee ID's?

a) Both I and II

b) I only

c) II only

d) Neither I nor I

108. Suppose relation R(A,B) currently has tuples {(1,2), (1,3), (3,4)} and relation S(B,C) currently has {(2,5), (4,6), (7,8)}. Then the number of tuples in the result of the SQL query:

`SELECT *`

`FROM R NATURAL OUTER JOIN S;`

- a) 2
- b) 4
- c) 6
- d) None of the mentioned

109. Suppose now that R(A,B) and S(A,B) are two relations with r and s tuples, respectively (again, not necessarily distinct). If m is the number of (not necessarily distinct) tuples in the result of the SQL query:

`R intersect S;`

Then which of the following is the most restrictive, correct condition on the value of m?

- a)  $m = \min(r,s)$
- b)  $0 \leq m \leq r + s$
- c)  $\min(r,s) \leq m \leq \max(r,s)$
- d)  $0 \leq m \leq \min(r,s)$

110. Suppose relation R(A,B,C,D,E) has the following functional dependencies:

- A  $\rightarrow$  B
- B  $\rightarrow$  C
- BC  $\rightarrow$  A
- A  $\rightarrow$  D
- E  $\rightarrow$  A
- D  $\rightarrow$  E

Which of the following is not a key?

- a) A
- b) E
- c) B, C
- d) D

### UNIT III

111. Which of the following creates a virtual relation for storing the query?

- a) Function
- b) View
- c) Procedure
- d) None of the mentioned

112. Which of the following is the syntax for views where v is view name?

- a) Create view v as “query name”;
- b) Create “query expression” as view;
- c) Create view v as “query expression”;
- d) Create view “query expression”;

113. SELECT course\_id

FROM physics\_fall\_2009

WHERE building= 'Watson';

Here the tuples are selected from the view. Which one denotes the view.

- a) Course\_id
- b) Watson
- c) Building
- d) physics\_fall\_2009

114. Materialised views make sure that

- a) View definition is kept stable
- b) View definition is kept up-to-date
- c) View definition is verified for error
- d) View is deleted after specified time

115. Updating the value of the view

- a) Will affect the relation from which it is defined
- b) Will not change the view definition
- c) Will not affect the relation from which it is defined
- d) Cannot determine

116. SQL view is said to be updatable (that is, inserts, updates or deletes can be applied on the view) if which of the following conditions are satisfied by the query defining the view?

- a) The from clause has only one database relation
- b) The query does not have a group by or having clause
- c) The select clause contains only attribute names of the relation and does not have any expressions, aggregates, or distinct specification
- d) All of the mentioned

117. Which of the following is used at the end of the view to reject the tuples which do not satisfy the condition in where clause?

- a) With
- b) Check
- c) With check
- d) All of the mentioned

118. Consider the two relations instructor and department

Instructor:

ID	Name	Dept_name
1001	Ted	Finance
1002	Bob	Music
1003	Ron	Physics

Department:

Dept_name	Building
Biology	Watson
Chemistry	Painter
Music	Taylor

Which of the following is used to create view for these relations together?

a)

```
CREATE VIEW instructor_info AS
```

```
SELECT ID, name, building
```

```
FROM instructor, department
```

```
WHERE instructor.dept name= department.dept name;
```

b)

```
CREATE VIEW instructor_info
```

```
SELECT ID, name, building
```

```
FROM instructor, department;
```

c)

```
CREATE VIEW instructor_info AS
SELECT ID, name, building
FROM instructor;
```

d)

```
CREATE VIEW instructor_info AS
SELECT ID, name, building
FROM department;
```

119. For the view Create view instructor\_info as

```
SELECT ID, name, building
FROM instructor, department
WHERE instructor.dept name= department.dept name;
```

If we insert tuple into the view as insert into instructor info values ('69987', 'White', 'Taylor');

What will be the values of the other attributes in instructor and department relations?

- a) Default value
- b) Null
- c) Error statement
- d) 0

120.CREATE VIEW faculty AS

```
SELECT ID, name, dept name
FROM instructor;
```

Find the error in this query.

- a) Instructor
- b) Select
- c) View ...as
- d) None of the mentioned

121. 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

122.

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)

123.

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

124. All aggregate functions except \_\_\_\_\_ ignore null values in their input collection.

- a) Count(attribute)
- b) Count(\*)
- c) Avg
- d) Sum

125. A Boolean data type that can take values true, false, and\_\_\_\_\_

- a) 1
- b) 0
- c) Null
- d) Unknown

126. 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

127. 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);
```

128. The phrase “greater than at least one” is represented in SQL by \_\_\_\_\_

a) < all

b) < some

c) > all

d) > some

129. 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)
```

130. 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

131.

```
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

132. 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

133. 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

134. The \_\_\_\_\_ keyword is used to access attributes of preceding tables or subqueries in the from clause.

- a) In
- b) Lateral
- c) Having
- d) With

135. Which of the following creates a temporary relation for the query on which it is defined?

- a) With
- b) From
- c) Where
- d) Select

136.

```
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

137. 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.

138. Which of the following is not an aggregate function?

- a) Avg
- b) Sum
- c) With
- d) Min

139. 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

140. 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

141. The \_\_\_\_ condition allows a general predicate over the relations being joined.

- a) On
- b) Using
- c) Set
- d) Where

142. Which of the join operations do not preserve non matched tuples?

- a) Left outer join
- b) Right outer join
- c) Inner join
- d) Natural join

143. SELECT \*

FROM student JOIN takes USING (ID);

The above query is equivalent to

a)

SELECT \*

FROM student INNER JOIN takes USING (ID);

b)

SELECT \*

FROM student OUTER JOIN takes USING (ID);

c) SELECT \*

FROM student LEFT OUTER JOIN takes USING (ID);

d) None of the mentioned

144. What type of join is needed when you wish to include rows that do not have matching values?

- a) Equi-join
- b) Natural join
- c) Outer join
- d) inner join

145. How many tables may be included with a join?

- a) One
- b) Two
- c) Three
- d) All of the mentioned

146. Which are the join types in join condition:

- a) Cross join
- b) Natural join
- c) Join with USING clause
- d) All of the mentioned

147. How many join types in join condition:

- a) 2
- b) 3
- c) 4
- d) 5

148. Which join refers to join records from the right table that have no matching key in the left table are include in the result set:

- a) Left outer join
- b) Right outer join
- c) Full outer join
- d) Half outer join

149. The operation which is not considered a basic operation of relational algebra is

- a) Join
- b) Selection
- c) Union
- d) Cross product

150. In SQL the statement `select * from R, S` is equivalent to

- a) `Select * from R natural join S`
- b) `Select * from R cross join S`
- c) `Select * from R union join S`
- d) `Select * from R inner join S`