

ACADEMY OF TECHNOLOGY

1st Internal Question bank PCC -CS-601

PART- A

1 mark Questions

1. Functional Dependencies are the types of constraints that are based on_____

- a) **Key**
- b) Key revisited
- c) Superset key
- d) None of the mentioned

2. In the relational table, which of the following can also be represented by the term "attribute"?

- a. Entity
- b. Row
- c. **Column**
- d. Both B & C

3. Which of the following is used in the application programs to request data from the database management system?

- a. Data Manipulation language
- b. Data Definition Language
- c. **Data Query Language**
- d. All of the above

4. Which one of the following command is used to delete the existing row in a table?

- a. **Delete**
- b. Update
- c. Insert
- d. None of the above

5. Which of the following commands is used to save any transaction permanently into the database?

- a. **Commit**
- b. Rollback
- c. Save-point
- d. None of the above

6. Which one of the following commands is used for removing (or deleting) a relation from the SQL database?

- a. Delete
- b. **Drop**
- c. Remove
- d. All of the above

7. Which one of the following commands is used to restore the database to the last committed state?

- a. Save-point
- b. **Rollback**
- c. Commit
- d. Both A & B

8. The database management system can be considered as the collection of _____ that enables us to create and maintain the database.

- a. Translators
- b. **Programs**
- c. Keys
- d. Language activity

9. Which of the following refers collection of the information stored in a database at a specific time?

- a. Independence
- b. **Instance of the database**
- c. Schema
- d. Data domain

10. The term "SQL" stands for

- a. Standard query language
- b. Sequential query language
- c. **Structured query language**
- d. Server-side query language

11. Which of the following are TCL commands?

- a. **COMMIT and ROLLBACK**
- b. UPDATE and TRUNCATE
- c. SELECT and INSERT
- d. GRANT and REVOKE

12. Which statement is used to delete all rows in a table without having the action logged?

- a. DELETE
- b. REMOVE
- c. DROP
- d. **TRUNCATE**

13. SQL Views are also known as

- a. Simple tables
- b. **Virtual tables**
- c. Complex tables
- d. Actual Tables

14. How many Primary keys can have in a table at most?

- a. **Only 1**
- b. Only 2
- c. Depends on no of Columns
- d. Depends on DBA

15. Which of the following is not Constraint in SQL?

- a. Primary Key
- b. Not Null
- c. Check
- d. **Union**

16. In a relational database, each tuple is divided into fields' called _____ (A)

- Relations
- (B) **Domains**
- (C) Queries
- (D) None of the above

17. In E-R Diagram, attribute is represented by.....

- (A) Rectangle
- (B) Square
- (C) Double Rectangle
- (D) **Ellipse**

18. In SQL, TCL stands for _____

- (A) Transmission Control Language
- (B) Transaction Central Language
- (C) Ternary Control Language
- (D) **Transaction Control Language**

19. Which of the following is a part of the Oracle database system?

- (A) Free lists
- (B) **Front end**
- (C) Network
- (D) None of the above

20. A recursive relationship is a relationship between an entity set and _____

- (A) **Itself**
- (B) Another entity set
- (C) Multiple entity sets
- (D) Relationship set

21. The language used in application programs to request data from the DBMS is referred to as the _____

- (A) **DML**
- (B) DDL
- (C) DCL
- (D) None of the above

22. The subset of a super key is a candidate key under what condition?

- (A) No proper subset is a super key
- (B) All subsets are super keys
- (C) Subset is a super key
- (D) Each subset is a super key

23. In SQL, which command is used to update existing row in a table?

- (A) Insert
- (B) Delete
- (C) Update
- (D) None of the above

24. A _____ contains the smallest unit of meaningful data, so you might call it the basic building block for a data file.

- (A) Record
- (B) Field
- (C) Table
- (D) None of the above

25. A relation between two entities is treated as a single entity is called _____

- (A) Aggregation
- (B) Specialization
- (C) Generalization
- (D) None of the above

26. Which of the following constraint does not enforce uniqueness?

- a. UNIQUE
- b. Primary key
- c. Foreign key
- d. None of the mentioned

27. Constraints are specified as a part of

- a. Data definition
- b. Data manipulation
- c. Data control
- d. None of the above

28. The employee salary should not be greater than Rs. 2000. This is

- a. check constraint
- b. referential constraint
- c. key constraint
- d. Feasible constraint

29. If the explicit value of attributes is not provided in SQL then the value included in new tuple in such situation, is called

- a. sampled statement
- b. decimal value
- c. notation statement
- d. default value

30. _____ 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

31. Which of the following operator combines two or more SELECT statements?

- (A) In
- (B) Like
- (C) Union
- (D) None of the above

32. DBMS helps achieve

- (A) Data independence
- (B) Centralized control of data
- (C) Neither (A) nor (B)
- (D) Both (A) and (B)

33. Foreign key in a relation is the one in which the _____ of another relation is referenced.

- a. Foreign key
- b. Primary key
- c. References
- d. Check constraint

34. Which of the following is not an integrity constraint at all?

- a. Not null
- b. Positive
- c. Unique
- d. Check predicate

35. To include integrity constraint in an existing relation use:

- a. Modify table
- b. Drop table
- c. Alter table
- d. Create table

36. Which of the constraint can be enforced one per table?

- a. Primary key constraint
- b. Not Null constraint
- c. Foreign Key constraint
- d. Check constraint

37.

_____ constraint is belong to Domain constraint

- a. Check
- b. Unique
- c. Primary
- d. Referential

38. _____ allows a unique number to be generated when a new record is inserted into a table.

- (A) Insert Into Select
- (B) Insert Into
- (C) Select Into
- (D) Auto Increment

39. Which of the following constraint is used to limit the value range that can be placed in a column?

- (A) Check
- (B) Default
- (C) Unique
- (D) None of the above

40. A Foreign key in one table points to a _____ key in another table.

- (A) Alternate
- (B) Default
- (C) Primary
- (D) None of the above

PART- B

2 marks Questions

1. Which of the following is true about the HAVING clause?
 - a. Similar to the WHERE clause but is used for columns rather than groups.
 - b. Similar to WHERE clause but is used for rows rather than columns.
 - c. **Similar to WHERE clause but is used for groups rather than rows.**
 - d. Acts exactly like a WHERE clause.
2. How can you change "Thomas" into "Michel" in the "LastName" column in the Users table?
 - a. UPDATE User SET LastName = 'Thomas' INTO LastName = 'Michel'
 - b. MODIFY Users SET LastName = 'Michel' WHERE LastName = 'Thomas'
 - c. MODIFY Users SET LastName = 'Thomas' INTO LastName = 'Michel'
 - d. **UPDATE Users SET LastName = 'Michel' WHERE LastName = 'Thomas'**
3. Which of the following is the correct order of a SQL statement?
 - a. SELECT, GROUP BY, WHERE, HAVING
 - b. **SELECT, WHERE, GROUP BY, HAVING**
 - c. SELECT, HAVING, WHERE, GROUP BY
 - d. SELECT, WHERE, HAVING, GROUP BY
4. What is the difference between a PRIMARY KEY and a UNIQUE KEY?
 - a. Primary key can store null value, whereas a unique key cannot store null value.
 - b. **We can have only one primary key in a table while we can have multiple unique keys**
 - c. Primary key cannot be a date variable whereas unique key can be
 - d. None of these
5. Which of the following are the synonyms for Column and ROW of a table?
 1. Row = [Tuple, Record] 2. Column = [Field, Attribute] 3. Row = [Tuple, Attribute]
 4. Columns = [Field, Record]
 - a. **1 and 2**
 - b. 3 and 4
 - c. Only 1
 - d. Only 2
6. Find the cities name with the condition and temperature from table 'whether' where condition= sunny or cloudy but temperature >= 60.
 - a) SELECT city, temperature, condition FROM weather WHERE condition = 'cloudy' AND condition = 'sunny' OR temperature >= 60
 - b).SELECT city, temperature, condition FROM weather WHERE condition = 'cloudy' OR condition = 'sunny' OR temperature >= 60
 - c).**SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' OR condition = 'cloudy' AND temperature >= 60**

d).SELECT city, temperature, condition FROM weather WHERE condition = 'sunny' AND condition = 'cloudy' AND temperature >= 60

7. Which of the following statement is correct to display all attributes whose humidity is in the range of 60 to 75 from the 'whether' table?

- a. SELECT * FROM weather WHERE humidity IN (60 to 75)
- b. **SELECT * FROM weather WHERE humidity BETWEEN 60 AND 75**
- c. SELECT * FROM weather WHERE humidity NOT IN (60 AND 75)
- d. SELECT * FROM weather WHERE humidity NOT BETWEEN 60 AND 75

8. Which of the following query is true for not null constraint

- a. **create table emp (id number(2) not null, name varchar(2));**
- b. alter table emp modify (id number(2) not null);
- c. create table emp (id not null number(2), name varchar(2));
- d. alter table emp modify (id number(2) notnull);

9. If we want to put condition on age column which must be greater than 18 then which of the following query is true for check constraint ?

- a. create table emp (emp_id number(3), age number(2) check age>18,mobile number(10),email_id varchar(30));
- b. alter table add age number(2) (check age>18);
- c. alter table add age number(2) check age>18;
- d. **create table emp (emp_id number(3), age number(2) check (age>18),mobile number(10),email_id varchar(30));**

10. Point out the wrong statement.

- a. Table constraints must be used when more than one column must be included in a constraint
- b. A column constraint is specified as part of a column definition and applies only to that column
- c. A table constraint is declared independently from a column definition and can apply to more than one column in a table
- d. **Primary keys allow for NULL as one of the unique values**

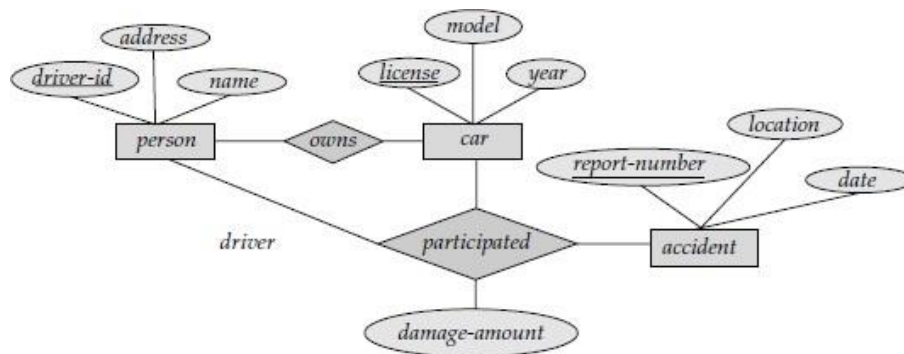
11. Consider the following statements and find the correct one/s (1) An entity integrity constraint states that no primary key value can be null.(2) A referential integrity constraint is specified between two relations.(3) A foreign key cannot be used to refer to its own relation

- a. Only 1
- b. Only 2
- c. Only 2 and 3
- d. **Only 1 and 2**

12. Point out the correct statement.

- a. CHECK constraints enforce domain integrity
- b. UNIQUE constraints enforce the uniqueness of the values in a set of columns
- c. In a UNIQUE constraint, no two rows in the table can have the same value for the columns
- d. **All of the mentioned**

13. Consider the following ERD



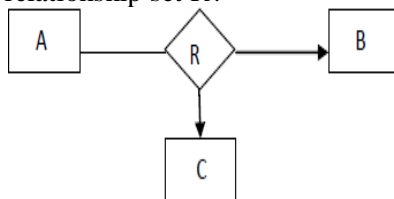
After converting the ERD in relational model, the number of tables will be

- a. 3
- b. 4**
- c. 5
- d. 6

14. Given Two Relations R1 And R2, Where R1 Contains N1 Tuples, R2 Contains N2 Tuples, and $N2 > N1 > 0$, Give The Min And Max Possible Sizes For The Resulting Relational Algebra Expressions:

- A) $R1 \cup R2$ B) $R1 \cap R2$
a. Min: N1,0 Max:N2,N1
b. Min:N2,0 Max:N1+N2,N1
c. Min:N1,N2 Max:N1+N2,N2
d. Min:0,N1 Max:N2,N1+N2

15. Consider the following ER diagram. If A has 100 entities, B has 1000 entities and C has 10 entities what is the maximum number of entities (A, B, C) that could be in the ternary relationship set R?



- a) 1000**
- b) 10000
- c) 100
- d) 10

16. The division operator divides a dividend A of degree m+n by a divisor relation B of degree n and produces a result of degree

- a. $m - 1$
- b. $m + 1$
- c. $m * m$
- d. m**

17. Given relations r(w, x) and s(y, z), the result of “select distinct w, x from r, s.” is guaranteed to be same as r provided

- a. r has no duplicates and s is non-empty**
- b. r and s have no duplicates
- c. s has no duplicates and r is non-empty

- d. r and s have the same number of tuples
18. The expression $\sigma_{\theta_1}(E1 \bowtie_{\theta_2} E2)$ is the same as
- $E1 \bowtie_{\theta_1 \wedge \theta_2} E2$
 - $\sigma_{\theta_1} E1 \wedge \sigma_{\theta_2} E2$
 - $E1 \bowtie_{\theta_1 \vee \theta_2} E2$
 - None of the above
19. ON UPDATE CASCADE ensures which of the following?
- Data Integrity
 - Normalization
 - Materialized Views
 - All of the above.
20. The HAVING clause does which of the following?
- Acts like a WHERE clause but is used for groups rather than rows.
 - Acts like a WHERE clause but is used for rows rather than columns.
 - Acts like a WHERE clause but is used for columns rather than groups.
 - Acts EXACTLY like a WHERE clause.
21. In an Entity-Relationship (ER) model, suppose R is a many-to-one relationship from entity set E1 to entity set E2. Assume that E1 and E2 participate totally in R and that the cardinality of E1 is greater than the cardinality of E2. Which one of the following is true about R?
- Every entity in E1 is associated with exactly one entity in E2.
 - Some entity in E1 is associated with more than one entity in E2.
 - Every entity in E2 is associated with exactly one entity in E1.
 - Every entity in E2 is associated with at most one entity in E1.
22. Let R(a, b, c) and S(d, e, f) be two relations in which d is the foreign key of S that refers to the primary key of R. Consider the following four operations R and S. I. Insert into R II. Insert into S III. Delete from R IV. Delete from S. Which of the following can cause violation of the referential integrity constraint above?
- Both I and IV
 - Both II and III
 - All of these
 - None of these
23. In three schema architecture of DBMS, the following data independences are possible
- Logical, view
 - Logical, view
 - View, physical
 - Logical, physical
24. Which of the following is true?
- Super key \subseteq Candidate key \subseteq Primary key
 - Primary key \subseteq Candidate key \subseteq Super key
 - Candidate key \subseteq Super key \subseteq Primary key
 - None of these

25. Which of the following are Binary Operations?

- a. Set difference, union, project
- b. Rename, union, set difference
- c. Cartesian product, set difference, project
- d. Cartesian product, set difference, union

26. Consider the following relations A, B, C. How many tuples does the result of the following relational algebra expression contain? Assume that the schema of A U B is the same as that of A.

$$(A \cup B) \bowtie_{A.Id > 40 \vee C.Id < 15} C$$

Table A

Id	Name	Age
12	Arun	60
15	Shreya	24
99	Rohit	11

Table B

Id	Name	Age
15	Shreya	24
25	Hari	40
98	Rohit	20
99	Rohit	11

Table C

Id	Phone	Area
10	2200	02
99	2100	01

- a. 7
- b. 4
- c. 5
- d. 9

27. Consider the following schema :

Sailors (sid, sname, rating, age)

Boats (bid, bname, colour)

Reserves (sid, bid, day)

Two boats can have the same name but the colour differentiates them. The two relations

ρ (Tempsids, $(\Pi_{sid, bid} Reserves) / (\Pi_{bid} (\sigma_{bname = 'Ganga'} Boats)))$, $\Pi_{sname} (Tempsids \bowtie Sailors)$

If / is division operation, the above set of relations represents the query

- a. Names of sailors who have reserved all boats called *Ganga*
- b. Names of sailors who have not reserved any *Ganga* boat
- c. Names of sailors who have reserved at least one *Ganga* boat
- d. Names of sailors who have reserved at most one *Ganga* boat

28. Suppose database table $T_1(P, R)$ currently has tuples $\{(10, 5), (15, 8), (25, 6)\}$ and table $T_2(A, C)$ currently has $\{(10, 6), (25, 3), (10, 5)\}$. Consider the following three relational algebra queries RA_1 , RA_2 and RA_3 :

$RA_1 : T_1 \bowtie_{T_1.P = T_2.A} T_2$ where \bowtie is natural join symbol

$RA_2 : T_1 \ltimes_{T_1.P = T_2.A} T_2$ where \ltimes is left outer join symbol

$RA_3 : T_1 \bowtie_{T_1.P = T_2.A} T_2$ and $T_1.R = T_2.C$

The number of tuples in the resulting table of RA_1 , RA_2 and RA_3 are given by:

- a. 2, 4, 2 respectively
- b. 2, 3, 2 respectively
- c. 3, 3, 1 respectively
- d. 3, 4, 1 respectively

29. Which of the following statements is FALSE about weak entity set?

- a. Weak entities can be deleted automatically when their strong entity is deleted.
- b. Weak entity set avoids the data duplication and consequent possible inconsistencies caused by duplicating the key of the strong entity.
- c. A weak entity set has no primary keys unless attributes of the strong entity set on which it depends are included
- d. Tuples in a weak entity set are not partitioned according to their relationship with tuples in a strong entity set.

30. Which one of the following is used to represent the supporting many-one relationships of a weak entity set in an entity-relationship diagram?

- a. Diamonds with double/bold border
- b. Rectangles with double/bold border
- c. Ovals with double/bold border
- d. Ovals that contain underlined identifiers