

27-01-2026

Tuesday

DBMS Theory Interview Questions

[Q1-Q15, Q19, Q20, Q23, Q26, Q27]

(Q1) Database Management System?

(Ans-1) database management system (DBMS)

- A software.
- data integrity, maintain consistency.
- update, store, retrieve data.
- Provide interface to interact with database.

(Q2) Advantage of Using DBMS

(Ans-2) → data integrity & consistency.

→ Fast data retrieval → indexing & query optimization.

→ Security → controlled access permission grant.

→ Reduce redundancy (duplicates).

→ Backup & retrieval.

→ Concurrent access. (Many user access same time).

(Q3) DBMS & RDBMS

→ database management system (DBMS)

→ Relational "

" (RDBMS).

DBM

→ Store as file
(non-relation)

→ Store as file

→ No integrity

→ Eg: - Microsoft

(Q4) Different types

① Hierarchical

② Network

③ Relational

④ Object -

(Q5) Relational DBMS

→ RDBMS

Row

Column

DBMS

- Store as files,
(non-relation form)
- Store as files.
- No integrity constraint.
- Eg:- Microsoft Access.

RDBMS

- Stored in relations
in row's & column's.
- Store in table.
- Follow integrity with
Primary & foreign key.
- MySQL, Oracle.

(Q4) Different Types Of DBMS.

Types

- ① Hierarchical DBMS → Tree like structure eg:- IBM's IMS
- ② Network DBMS → Graph (many-to many) eg:- IDS
- ③ Relational DBMS → Table structure :- Eg - MySQL
- ④ object-oriented DBMS → Store data as object
as in OOPS.
Eg:- object DB.

(Q5) Relation in DBMS.

→ Row's & columns make a relation
in DBMS.

Row : → Record

Column : → Attribute

(Q6) Table in DBMS

- Collection of data stored in rows & columns.
- Row → record / column → attribute.

(Q7) Row & column in DBMS

- Row (tuple) :- Single record & contains value for each column.
- Column (attribute) :- characteristic / attribute.

(Q8) Primary Components of DBMS

- 1) Database Engine :- store data, retrieve & manage. → Organize info into rel
- 2) Database Schema :- define structure of database.
- 3) Query Processing :- interpret & execute SQL queries. → imp
- 4) Transaction Manager :- Ensure ACID properties. (2) 1-N
- 5) Storage Manager :- Physical storage of database.

PTO →

(Ans-1)

(Q9) Primary
→ (PK) is a
(cannot be)
→ Eg:- Ro

(Q10) Fore

→ attrib.
primary
tables.
→ Eg :-

(Q11) Norm

→ Organ
into
rel

→ imp

(2) 1-N

(Q12)

(Q-9) Primary Key with Example.

- (PK) is a unique record for each table.
(Cannot be NULL.)
- Eg:- Roll number column in a table.

(Q-10) Foreign Key with example.

- attribute in a table that links to primary key of another relation b/w two tables.
- Eg:- branch-name in course-name.

(Q11) Normalization & importance

- Organizing data by dividing large table into smaller tables maintaining relation & reducing redundancy.
- importance:-
 - ① Eliminating duplicates.
 - ② Improves integrity
 - ③ Prevent anomalies (mistakes) during insertion, deletion.

(Q12) Denormalization, difference from normalization

- (Ans-12) Adds/combines tables at cost of redundancy for performance boost.

(Q13) Candidate Key in DBMS.

A set of one or more attributes that can identify a tuple. Multiple candidate keys are selected and only one is chosen as primary key.

(Q14) SQL SELECT Statement Usage.

SELECT is a statement to query data from tables. It also allows to retrieve specific columns.

(Q15) View in DBMS, How differ from a table.

→ A view does not store data instead present data from other tables.

19, 20, 23, 26, 27

(Q16) DELETE VS TRUNCATE in SQL

DELETE :- Removes Row & can be rolled back.

TRUNCATE :- Permanently deletes the row, cannot be rolled back.

(Q20) Index in DBMS

Index is like a used for fast re

(Q23) Joins

Join is used to more table

Types → (Al)

① inner join :-

② left join :-

③ right join :-

④ full join

⑤ Cross jo

⑥ Self ↗

(Q20) Index in DBMS & use

Index is like a table of content in book
Used for fast retrieval of data from table.

(Q23) JOINED type of joins.

Join is used to combine row of two or more table with related column.

Types → (All capital).

- ① inner join :- Only matching rows both table.
- ② left join :- row from left table match right.
→ ↓
- ③ right join :- " right ≠ left".
- ④ full join :- All rows (matched or unmatched) with NULL

⑤ Cross join :- Every row of one table to every row of other.
(Cartesian product).

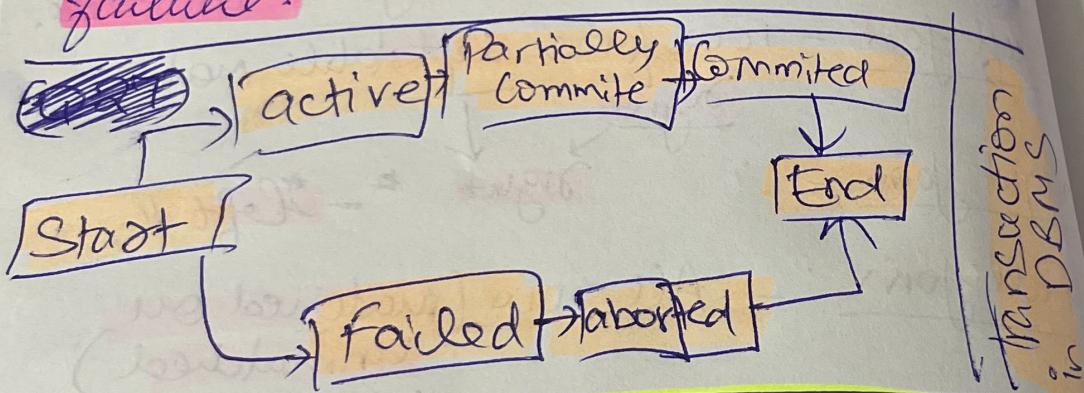
⑥ Self join :- Compare every row & column within itself to find out relation / value.

PTO →

(Q26) Transaction in DBMS

Sequence of SQL operations Executed as a ~~sequence~~^{wif} of single work -
→ maintain integrity
→ maintain consistency.
→ Provide isolation.

Basically, assures database reach a valid state regardless of error & system failure.



OOP'S THEORY
Interview Q

(Q27) ACID properties in DBMS

Atomicity :- If one transaction fail,
all fails.

Consistency :- Must follow all rules.

Isolation :- Independent Execution.

Durability :- Changes are permanent even on failure.