

DBMS Question Bank

Q1. What is a database management system?

A: dbms is a complex software system that is used to manage, store and manipulate data and metadata used to describe the data.

Q2. What is a key? What are different keys in database?

A: A key is an attribute or group of attributes. They are used to perform some specific operation depending on their operation. The keys are classified into primary key, secondary key, alternative key, super key, candidate key, compound or concatenated or composite key.

Q3. What is a primary key?

A: A primary key is an attribute to identify a record uniquely is considered to be primary key. For eg in the student table student_no is the primary key because it can be used to identify unique record or unique student.

Q4. What is a secondary key?

A: An attribute used to identify a group of records satisfying a given condition is said to be a secondary key. In the employee table ename is a secondary key because more than one employee can have the same name.

Q5. What is a candidate key?

A: Two different candidate keys are contest for primary key post. Any of them can be selected as primary key.

Q6. What is an alternate key?

A: If any one of the candidate keys among the different candidate keys available is selected as primary key then remaining keys are called alternate key.

Q7. What is a super key?

A: Superset of primary key is the super key. Minimal superkey is the primary key.

Q8: What is a composite key?

A: If the primary key is combination of more than one attribute then it is called the composite key.

Q9: What is a relation?

A: A relation consists of a homogeneous set of tuples. Informally a relation is a table.

Q10: What is a table?

A: It is the representation of a relation having records as rows and attributes as columns.

Q11:What is an attribute?

A: An object or entity is characterized by its properties or attributes. In relational database systems attributes corresponds to fields.

Q12:What is a domain?

A: The set of allowable value for the attribute is the domain of the attribute.

Q13:What is a tuple?

A: Informally tuple is a row in a table.

Q 14:What is a selection?

A: An operation that selects only some of the tuples in the relation is known as selection operation

Q15:What is a join operation?

A:The join operation allows the combination of two relations to form a new relation.

Q16:what are base operations in relational algebra?

A: **Union:**

The term of the relation as performed by combining the tuples from one relation with those a second relation to produce a third relation.duplicate tuples are eliminated.the the relation must be union compatable.

Difference:

The difference of two relations is a third relation having tuples that occur in the first relation but not in the second relation.

Intersection:

The intersection operation selects the common tuples from the two relations.

Cartesian Product:

The cartesian product of two relations is the concatenation of tuples belonging to the two relations.a new resultant scheme is created consisting of concatenation of all possible combination of tuples.

Q17:What is data definition language?

A:The data schema is specified by a set of definitions which are expressed by a special language called a DDL.

Q18:What is a data directory or data dictionary?

A:The result of compilation of DDL statements is a set of tables which are stored in a special file called data dictionary or data directory.

Q19:What is a DML?

A:A DML is a language that enables users to access or manipulate data as organised by the appropriate data model. There are basically two types:

1)Procedural DML require a user to specify what data is needed and how to get it.

2)Non procedural DML require a user to specify what data is needed without spectfying how to get it.

Q20:What is a query?

A:A query is a statement requesting the retrieval of information.

Q21:What is a query language?

A:The portion of DML that involves information retrieval is called a query language.

Q22:What are the advantages of DBMS?

- Reduction of redundancies
- integrity
- security
- conflict resolution
- data independence.

Q23:Data definition is done through which statement?

A:Data definition in SQL is via the create statement. The statement can be used to create a table,index or view.

Q24:What is the command to alter the structure of the table?

A: The definition of the existing relation can be altered by using ALTER statement.this statement allows a new column to be added to an existing relation.

Q25: What is a first normal form?

A: A relation which contains no multivalued and composite attributes.

Q26:What is a second normal form?

A: A relation is in second normal form for if it is first normal form and every nonkey attribute is fully functionally dependent on primary key.

Q27: What is time stamping?

A:In the time stamping based method,a serial order is created among the concurrent transactions by assigning to each transaction a unique timestamp.

Q28:What is data base schema?

A:It is the description of the database i.e its datastructure and not the detail.

Q29:What is a self join?

A: Joining the table to the same table.

Q30:What are the different aggregate functions in SQL?

A:AVG,MIN,MAX,COUNT,SUM.

Q31:What is dead locking?

A:It is the situation where two transactions are waiting for other to release a lock on an item.

Q32:What is an entity?

A:It represents a real world object.

Q33:What is two phase locking?

A:It is a most common mechanism that is used to control concurrency in two phases for achieving the serializability. the two phases are Growing and Shrinking.

1)a transaction acquires locks on data items it will need to complete the transaction,this is called growing process.a transaction may obtain lock but may not release any lock.

2)one lock is released no other lock may be acquired.this is called shrinking process.a transaction may release locks but may not obtain any new locks.

Q34:What is cardinality?

A: The no of instances of each entity involved in an instance of a relation of a relation ship describe how often an entity can participate in relation ship.(1:1,1:many,many:many).

Q35:Disadvantage in File Processing System?

Data redundancy & inconsistency.

Difficult in accessing data.

Data isolation.

Data integrity.

Concurrent access is not possible.

Security Problems. .

Q36:Describe the three levels of data abstraction?

A:The are three levels of abstraction:

Physical level: The lowest level of abstraction describes how data are stored.

Logical level: The next higher level of abstraction, describes what data are stored in database and what relationship among those data.

View level: The highest level of abstraction describes only part of entire database.

Q37:Define the "integrity constraints".

- Entity Integrity: States that Primary key cannot have NULL value.

- Referential Integrity: States that Foreign Key can be either a NULL value or should be Primary Key value of other relation.

Q38:What is Data Independence?

Data independence means that the application is independent of the storage structure and access strategy of data. In other words, the ability to modify the schema definition in one level should not affect the schema definition in the next higher level.

Q39:What is Weak Entity set?

A:An entity set may not have sufficient attributes to form a primary key, and its primary key compromises of its partial key and primary key of its parent entity, then it is said to be Weak Entity set.

Q40:What is Functional Dependency?

A:A Functional dependency is denoted by $X \rightarrow Y$ between two sets of attributes X and Y that are subsets of R specifies a constraint on the possible tuple that can form a relation state r of R . The constraint is for any two tuples t_1 and t_2 in r if $t_1[X] = t_2[X]$ then they have $t_1[Y] = t_2[Y]$. This means the value of X component of a tuple uniquely determines the value of component Y .