Data Integrity and Normalization

★ Multiple Choice Questions ★

Q 1: A foreign key constraint is also called:
- **(A) Referential Integrity**
- (B) Entity integrity
- (C) Integrity
- (D) Redundancy

Q 2: In a relational database, a table is also called:
- (A) Tuple
- **(B) Relation**
- (C) Record
- (D) Schema

Q 3: Data integrity is expressed in terms of:
- (A) Constraints
- (B) Consistency rules
- (C) Correctness
- **(D) All of these**

Q 4: Integrity is concerned with the:
- (A) Reliability of data
- (B) Feasibility of data
- **(C) Quality of data**
- (D) Accessibility of data

Q 5: The entity integrity rules states the following:
- **(A) No primary key attribute can be null**
- (B) Primary key must have only one attribute
- (C) Each entity must have a primary key
- (D) None of these

Q 6: A rule that states that each foreign key value must match a primary key value in the other relation is called:
- **(A) Referential integrity constraint**
- (B) Entity key group rule
- (C) Key match rule
- (D) Foreign / Primary match rule

Q 7: The Goal of Normalization is to:
- (A) Increase
- **(B) Get Stable**
- (C) Increase Inconsistency Redundancy
- (D) Increase Anomalies Data Structure

Q 8: In 2NF, which form of dependency is removed?
- (A) Functional
- **(B) Partial**
- (C) Associative
- (D) Transitive

Q 9: In 3NF, which form of dependency is removed?
- (A) Functional
- (B) Non - Functional
- (C) Associative
- **(D) Transitive**

Q10: The attribute on left hand side of arrow in functional dependency is called:
- (A) Entity
- **(B) Determinant**
- (C) Dependent
- (D) Attribute

Q11: In following normal form , any repeating group from the table is removed:
- (A) 1 NF
- **(B) 2 NF**
- (C) 3 NF
- (D) 4 NF

Q12: In 2NF, a non - key attribute must not depend on another:
- **(A) Non-key attribute**
- (B) Key attribute
- (C) Composite key
- (D) Sort key

Q13: Following anomalies arise due to transitive dependency:
- (A) Insertion
- (B) Deletion
- (C) Modification
- **(D) All of these**

Q14: In 3NF , which form of dependency is removed ?

Ⓐ Functional	Ⓑ Non-functional	Ⓒ Associative	Ⓓ Transitive

Q15: In relational database a table is also called a:

Ⓐ Tuple	Ⓑ Relation	Ⓒ File	Ⓓ Scheme

Q16: In 3NF , a non-key attribute must not depend on a (n):

Ⓐ Non-key attribute	Ⓑ Composite key	Ⓒ Key attribute	Ⓓ Sort key

Q17: Different attributes in two different tables having same name are referred to as:

Ⓐ Synonym	Ⓑ Homonym	Ⓒ Acronym	Ⓓ Mutually exclusive

Q18: Every relation must have a:

Ⓐ Primary key	Ⓑ Candidate key	Ⓒ Secondary key	Ⓓ Composite key

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Q1: What is meant by entity integrity?

Ans: It is a constraint on an entity. Entity integrity is an integrity rule which states that every table must have a primary key and that the column or columns chosen to be the primary key should be unique and not null.

A direct consequence of this integrity rule is that duplicate are forbidden in a table. If each value of a primary key must be unique no duplicate rows can logically appear in a table. This NOT NULL characteristic of a primary key ensures that a value can be used to identify all rows in a table.

Q2: What is referential integrity?

Ans: It is a constraint on foreign key. If a foreign exists in a relation then either the foreign key value must match the primary key value of some tuple in its parent table or the foreign key value must be completely NULL.

Q3: What is redundancy?

Ans: Redundancy appears when same data values are stored more than once in a table. It is also called redundancy if the same values are stored in more than one table.

Q4: What is normalization?

Ans: Normalization is s process of converting complex data structures into simple and stable data structures. It is a technique for reviewing the list of entities and their attributes to ensure that attributes are stored from where they belong. In other words we can say that it is a process of analyzing the dependencies of attributes within entities.

Q5: What is repeating group?

Ans: Repeating group is a set of one or more data items that may occur a variable number of times in a tuple.

Q6: What are database anomalies?

Ans: These are certain situations created when one or more records are deleted, modified or inserted in the database and the databases goes into an inconsistent state.

Q7: What is insertion anomaly?

Ans: Insertion anomaly occurs when a new record is inserted in the relation. In this anomaly, the user cannot insert a fact about an entity until he has an additional fact about another entity.

Q8: What is deletion anomaly?

Ans: The deletion anomaly occurs when a record is deleted. In this anomaly the deletion of a record automatically deletes the fact of another entity.

Q9: What is modification anomaly?

Ans: The modification anomaly occurs when the record is updated in the relation. In this case the modification in the value of specific attribute requires modification in all records in which that value occurs.

Q10: What is partial dependency?

Ans: A type of dependency in which one or more non-key attributes are functionally dependent on a part of primary key.

Q11: What is transitive dependency?

Ans: The transitive dependency is a type of functional dependency between two or more non-key attributes. It exists if a non-key attribute depends on any other non- key attribute.

Q12: What is an integrity constraint?

Ans: Integrity means the correctness and consistency of the data. Integrity is usually expressed in terms of certain constraints which are the consistency rules that the database is not permitted to violate. Integrity is also concerned with the quality of data. Integrity is maintained with the help of integrity constraints. These constraints are the rules that are designed to keep data consistent and correct.

Q13: What is 1st Normal form?

Ans: A relation is in 1st normal form if and only if all underlying domain contain atomic values only. Each cell should contain only one value and relation does not contain any repeating group.

Q14: What is 2nd Normal form?

Ans: A relation is in 2nd normal form if it is in 1st normal form and every non-key attribute is fully functionally dependent on the primary key. All on-key attribute must depend on the primary key.

Following are a few conditions for 2ND normal form.

➢ The primary key consists of only one attribute.
➢ No non-key attributes exist in the relation.
➢ Every non-key attribute is functionally dependent on the primary key.

Q15: What is 3rd Normal form?

Ans: A relation is in 3rd normal form if it is in 2ND normal form and no transitive dependencies exist. Transitive dependency is a functional dependency between two or more non-key attributes of a relation.