

Module 1. Introduction / Relational Data Model

1. Which of the following is a characteristic of relational databases?
 - a) Many users can use the same database at the same time.
 - b) Different database tables can be connected to provide more information.
 - c) Data is shared by many applications.
 - d) All the above.
2. Which of the following constraints are enforced by a relational data model?
 - a) A value stored in a column within a row is atomic.
 - b) Values in a primary key column are unique.
 - c) Values in a foreign key column are a subset of values in the referenced column.
 - d) All the above.
3. Which of the following plays an important role in *representing* information about the real world in a database?
 - a) The data definition language.
 - b) The data manipulation language.
 - c) The buffer manager.
 - d) The data model.
4. The component of a database that makes it self-describing is the:
 - a) tables
 - b) view
 - c) log file
 - d) metadata
5. Which of the following is not true about a relation?
 - a) A relation is a two-dimensional table.
 - b) The cells of a relation must hold a single value.
 - c) A relation may have duplicate column names.
 - d) A relation may not have duplicate rows.
 - e) The order of the rows of a relation is insignificant.
6. What is the RDBMS terminology for a column?
 - a) Tuple
 - b) Attribute
 - c) Relation
 - d) Domain
7. Which of the following is incorrect?
 - a) A system catalog is a repository of information describing the data in the database.
 - b) The information stored in the catalog is called metadata.
 - c) A relation cannot have more than one attribute which can uniquely identify a tuple in the relation.
 - d) NULL is not a value, but rather it is the absence of a value.
8. Which of the following is incorrect?
 - a) A relation always has a unique identifier.
 - b) A table can have only one candidate key.
 - c) A table can have multiple foreign keys.
 - d) Degree of a table means the number of columns in a table.

9. What is the cardinality of a table with 1,000 rows (or tuples) and 10 columns (or attributes)?
1,000
10. Does the relational model provide physical and logical data independence? Explain.
11. What is the difference between a candidate key and a primary key? What is a superkey?
12. Which of the following key in a table can uniquely identify a row in the table?
- a) Super key
 - b) Primary key
 - c) Candidate key
 - d) All the above.
13. Mark True or False
- 1) An entity is an object or thing in the real world.
 - 2) "Relation" is the same as "Relationship".
 - 3) A primary key has only one attribute.
 - 4) The value of a foreign key cannot be NULL.
 - 5) The value of a primary key cannot be NULL.
 - 6) A *superkey* is an attribute, or a set of attributes, that uniquely identifies a tuple (or row) within a relation.
 - 7) A foreign key cannot refer to a primary key in the same table.