

**1. Which one of the following is a set of one or more attributes taken collectively to uniquely identify a record?**

a) Candidate key b) Sub key c) Super key d) Foreign key

**2. Consider attributes ID, CITY and NAME. Which one of this can be considered as a super key?**

a) NAME b) ID c) CITY d) CITY, ID

**3. 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

**4. A \_\_\_ is a property of the entire relation, rather than of the individual tuples in which each tuple is unique.**

a) Rows b) Key c) Attribute d) Fields

**5. Which one of the following attribute can be taken as a primary key?**

a) Name b) Street c) Id d) Department

**6. Which one of the following cannot be taken as a primary key?**

a) Id b) Register number c) Dept\_id d) Street

**7. An attribute in a relation is a foreign key if the \_\_\_\_\_ key from one relation is used as an attribute in that relation.**

a) Candidate b) Primary c) Super d) Sub

**8. The relation with the attribute which is the primary key is referenced in another relation. The relation which has the attribute as a primary key is called \_\_\_\_\_**

a) Referential relation b) Referencing relation c) Referenced relation d) Referred relation

**9. The \_\_\_\_\_ is the one in which the primary key of one relation is used as a normal attribute in another relation.**

a) Referential relation b) Referencing relation c) Referenced relation d) Referred relation

**10. A \_\_\_\_\_ integrity constraint requires that the values appearing in specified attributes of any tuple in the referencing relation also appear in specified attributes of at least one tuple in the referenced relation.**

a) Referential b) Referencing c) Specific d) Primary

## Classwork

1. Define the following terms: tuple, attribute, domain, relation, key, and schema.
2. Explain the difference between a table and a relation in the context of the relational model
3. Describe how attributes are represented in a relation. Provide examples.
4. Explain how tables organize data in a relational database and why they are considered a fundamental component.
5. Provide an example scenario and describe how you would represent it using a table in the relational model.
6. Explain the concept of a tuple in the context of a database table. Provide an example of a tuple.
7. Discuss the importance of ensuring uniqueness of rows (no duplicates) in a database relation.
8. How are null values handled in a relational table, and what purpose do they serve?
9. Explain how the concept of a relation in the relational model corresponds to a mathematical relation. Provide examples.

10. Discuss how mathematical set operations (e.g., union, intersection) can be applied to relations in the relational model.
11. How do attribute domain constraints contribute to the integrity of a relational database?
12. Define candidate keys (CK) and explain their role in database design. Differentiate between candidate keys and primary keys (PK) and provide an example of each.
13. Explain how foreign keys (FKs) establish relationships between tables in a database. Provide a real-world scenario.
14. Given a table, how would you identify the candidate keys and choose a primary key?
15. Define entity integrity and explain why it is important in maintaining data integrity.
16. Define referential integrity and its role in maintaining data consistency between related tables.
17. Describe the actions that can be taken when a foreign key constraint is violated.
18. Define a database view and explain its purpose in database management.
19. Discuss the advantages of using views in database design and query optimization.
20. Provide an example of a situation where creating a view would be beneficial in simplifying complex queries or enhancing security.