

## Computer Science - ICS Part 2 Computer Science Chapter 4 Short Questions Preparation

Q1. Define Synonym?

**Ans 1:** A synonym is created when two different names are used for the same information (Attributes). If an attribute resides in more than one entity, make sure that all entities use the same attribute name.

Q2. Define Insertion Anomaly.

**Ans 1:** An Insert Anomaly occurs when certain attributes cannot be inserted into the database without the presence of other attributes. For Example this is the converse of delete anomaly. We can't add a new course unless we have at least one student enrolled on the course.

Q3. Define partial dependency .

**Ans 1:** A partial functional dependency exists when one or more non-key attributes (Such as NAME) are functionally dependent on part (but not all) of the primary key.

Q4. Define Transitive Dependency .

**Ans 1:** Transitive Dependency is a functional dependency in a relation between two (or more) non-key attributes. It is also defined as "It states that in a relation R, if an attribute B is functionally dependent on an attribute A, and the attribute C is functionally dependent on the attribute B. This implies that the attribute C is functionally dependent on the attribute A."

Q5. Write types of Anomalies?

**Ans 1:** Database Anomalies: Anomalies are problems that can occur in poorly planned, un-normalized database where all the data is stored in one table (a flat-file database). Types of Anomalies: a) Insertion Anomaly b) Deletion Anomaly c) Modification Anomaly

Q6. What is homonym?

**Ans 1:** A homonym is created when the same name is used for two attributes. Consider the following example: Customer Supplier Company\_Name Company\_Name. We should use Supplier\_Name instead of Company\_Name in Supplier.

Q7. How first normal form is achieved?

**Ans 1:** A relation R is in First Normal Form if and only if all underlying domains contain atomic values only. The Pre-requisite is that, A relation has always a primary key associated with it. Thus, we can define it as follows: 1) All entities must have a key, composed of a combination of one or more attributes which uniquely identify one occurrence of the entity. 2) For any single occurrence of an entity, each attribute must have one and only one value or "An attribute must have no REPEATING GROUPS".

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Q8. Define Mutual Exclusive of data.

**Ans 1:** Mutually exclusive data exist when attributes occur whose values can be expressed as "Yes/no" indicators , cannot all be true for any single entity.

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Q9. Define 3rd normal form .

**Ans 1:** A relation is in third normal form (3 NF) if it is in 2 NF and no transitive dependencies exist.A more precise definition for 3 NF is : "A non-key attribute must not depend on any other non-key attributes " or if a non-key attributes value can be obtained simply by Knowing the value of another non-key attribute, the relation is not in 3 NF.

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Q10. How is Entity Integrity attained?

**Ans 1:** The entity integrity can be attained by specifying primary key in a relation. When a primary key constraint is specified on a relation, the DBMS automatically applies the entity integrity on the attribute that is used as primary key .

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