

DBMS

Assignment #01

BCSF19AS40

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Q1: Concurrent Access:-

Concurrent access means when data from one database is being accessed from multiple locations (nodes) at the same time.

For example, the data stored on CMS of PUCIT can be accessed from multiple nodes at the same time.

The nodes have certain rights over the data/information in the database and they can alter/update data to some extent. For this cause, the database administrator has to enforce some control operations so that data integrity and consistency remains unaffected.

Q2:

Data Administration:-

Database administration means that DBA has to ensure that database is always available. Some secondary tasks are also a part of database administration as briefed next.



### → Security:-

Security refers to the preservation of data of data from unauthorized access. DB-administration involves fortifying the data for authorized users only.

For example, CMS at PUCIT can only be accessed by enrolled students, staff members and DBA.

### → Tuning:-

It refers to optimization of database to keep its performance flawless. It includes query tuning, memory allocation, file fragmentation, and disk space management.

### → Backup & Recovery:-

DBA ensures the quality backup of data in database and if it's lost from host, could be recovered from backup. Backup can be full or selective depending upon sensitivity of information.

### → Reports:-

To access data or to generate reports, queries are made to database which are also handled under the database administration.



## Database:-

A database is an organized collection of data generally stored and accessed electronically from a computer system.

There are several systems available for making databases. One example of it is CMS of PUCIT. MySQL, Oracle database, MS Access etc are other widely used DBMS.

A database offers following controls over the data.

- Access
- Modify
- Delete
- Update
- Backup & recovery

## Q34: Database System:-

Database system OR DBMS is a computer system that serves as a medium of interaction between user and data in the database.

A DBMS manages, organizes, and preserves data and authorized users can perform actions on it.



Q5: DBA :-

Database Administrator (DBA) is the person who holds super user rights over the database. He administers the database and defines rights for other users. A DBA is responsible for security, tuning, backup and recovery of data in database as well.

Q6: Integration:-

Data integration means to combine data from different sources into a unified view. The goal of this process is to ensure consistent access and delivery of data.

Q7: Integrity:-

Data integrity refers to the accuracy and consistency of data stored in database. It includes the maintenance of database and completeness and reliability of data in database.

Q8: Persistent data:-

It is the attribute in DBMS which is not frequently accessed or modified. It can be referred as permanent information. For example, the CNIC of a person in NADRA's DBMS.



Q 9: Redundancy:-

Redundancy means repetition. In DBMS, data redundancy means that same data is present multiple times in a database. This affects the quality of database as database becomes unreliable and inconsistent.

Q 10: Security:-

Data security means to protect the data to be accessed by unauthorized users. Database is to be fortified for authorized users only. For example, CMS at PUCIT is only accessible by students, teachers and DBA.

Q 11: Sharing:-

Data sharing means to make the data available for users and for scholarly research purposes.

Q 12: Data Dictionary:-

It provides information about database. Such as what is in the database, where is data stored, who can access data and to what extent.



Q13: Distributed Database:-

Distributed database means to store data at multiple locations. The data is physically stored on different locations but appears to users as a single database.

Q14: DDL:-

Stands for Data Definition Language. It is a syntax of creating and modifying database objects such as tables, indices and users. It's like a computer language for database. Some commands are "CREATE, ALTER, DROP" etc.

Q15: DML:-

Stands for Data Manipulation Language. It is used to perform certain operations on data like adding data, retrieving data, updating or deleting data.