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**Database Management System**

**Take away cat**

**Question 4**

1. Name four database security mechanisms.. (4)
2. Access control
3. Authentications
4. Backups
5. Encryption
6. Clearly distinguish between data administration and database administration.(4)

***Data Administration – Logical Design***

* Perform business requirements gathering
* Analyze requirements
* Model business based on requirements (conceptual and logical)
* Define and enforce standards and conventions (definition, naming, abbreviation)
* Conduct data definition sessions with users
* Manage and administer meta data repository and Data Administration CASE (modeling) tools
* Assist Database Administration in creating physical tables from logical models

***Database Administration – Physical Design / Operational***

* Define required parameters for database definition
* Analyze data volume and space requirements
* Perform database tuning and parameter enhancements
* Execute database backups and recoveries
* Monitor database space requirements
* Verify integrity of data in databases
* Coordinate the transformation of logical structures to properly performing physical structures

1. Define the following terms with respect to distributed relational database system.(6)
2. Fragmentation:  techniques that are used to break up the database into logical units
3. Data allocatin: the process of **allocating** fragments—or replicas of fragments—for storage at the various sites
4. Replication: permits certain data to be stored in more than one site.
5. Discuss two disadvantages of fragmentation with respect to distributed relational database system.(4)

* Access speeds may be very high if data from different fragments are needed
* If we are using recursive fragmentation, then it will be very expensive

1. What is the difference between vertical and horizontal fragmentation schemes.(2)

**Horizontal fragmentation –**Horizontal fragmentation refers to the process of dividing a table horizontally by assigning each row or (a group of rows) of relation to one or more fragments.

**Vertical Fragmentation –**Vertical fragmentation refers to the process of decomposing a table vertically by attributes is columns. In this fragmentation, some of the attributes are stored in one system and the rest are stored in other systems.