**Assignment- MASTER OF COMPUTER APPLICATIONS (MCA)**

**DCA6104 – ADVANCED DATABASE MANAGEMENT SYSTEM**

**Assignment Set- 1st**

**1. What do you mean by Normalization? How BCNF is different from 3NF?**

**Ans: Introduction:** Normalisation comprises of various set of rules which are used to make sure that the database relations are fully normalised by listing the functional dependencies and decomposing them into smaller, efficient tables.

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**2. Explain the concept of serializability and Recoverability. Illustrate how to manage rollbacks by locking.**

**Ans: Introduction:** Serializability is the main criterion for the accuracy of simultaneous transactions executions and a main objective for concurrency control. In the context of data storage and communication, serialisability is the process of converting a data structure into a format that can be

**3. What do you mean by the data model? Explain different types of the data model by giving a suitable example.**

**Ans: Introduction:** A data model is defined as an organisation of the real world objects (entities), restrictions on them, and the relationships between the objects. A database language is considered as a tangible syntax for a data

**Assignment Set – II**

**4. Explain the concept of database recovery management. Discuss the different levels of backup used for recovering data.**

**Ans: Introduction:** Database Recovery is concerned with the restoring of the database to an accurate state in the occurrence of a failure. There are numerous storage devices that hold data. They are main memory, magnetic disk, magnetic tape and optical disks. The DBMS needs recovery on the different types of failures defined as below:

1. System crashes (Software & Hardware)

2. Media

**5. (a) What is a persistent programming language? How can it be differentiated with embedded SQL? Illustrate**

**Ans: Introduction:** Persistent data is defined as the data that continue to occur even after program that generated it, has finished. A programming language which is expanded by means of constructs to manage persistent data is known as a persistent programming language.

**Content:** A

**6. (a) Differentiate between RDBMS, OODBMS and ORDBMS**

**Ans: Introduction:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Criteria** | **RDBMS** | **ODBMS** | **ORDBMS** |
| **Defining standard** | SQL2 | ODMG-2.0 | SQL3 (in process) |
| **Support For objectoriented features** | No support provided; Program object is hard to be mapped to the database | Extensive Support provided | Restricted support; mainly to new data type |

 **(b) What is the difference between temporal and multimedia database?**

**Ans: Introduction: Temporal databases** are used to record time-referenced data. Basically majority of the database technologies are temporal. For example:

* Record keeping function (inventory administration, medical-record and personnel, )
* Financial function