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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

CAT – I

CSE 2004 – Database Management Systems

Course Name: B.Tech   Slot: D1   Max. Marks: 50

Answer <u>ALL</u> Questions (5 * 10 = 50)

1. a. List out any five disadvantages of a file based system.   (5)

- Data Redundancy and inconsistency
- Difficulty in accessing data – program needs to be changed every time
- Data isolation –Different file formats
- Integrity problems – Checking constraints
- Atomicity problems – Commit and Rollback
- Concurrent access anomalies
    a. Security problems – Data views

b. What is the difference between logical data independence and physical data independence? Which one is harder to achieve? Why?   (5)

Logical Data Independence:
- **Logical data independence** is the capacity to change the conceptual schema without having to change external schemas or application programs. We may change the conceptual schema to expand the database (by adding a record type or data item), to change constraints, or to reduce the database (by removing a record type or data item). In the last case, external schemas that refer only to the remaining data should not be affected
- **Physical data independence** is the capacity to change the internal schema without having to change the conceptual schema. Hence, the external schemas need not be changed as well. Changes to the internal schema may be needed because some physical files were reorganized—for example, by creating additional access structures—to improve the performance of retrieval or update. If the same data as before remains in the database, we should not have to change the conceptual schema

Logical data independence is harder to achieve because it allows structural and constraint changes without affecting application programs—a much stricter requirement.