

(Time: 3 Hrs)

Marks: 80

N.B. : 1. Question no. 1 is **compulsory**.

2. Solve any **Three** questions out of remaining **Five** questions.

Qu-1 Attempt any **FOUR** of the following.

- a) Write short note on “Query Evaluation Plan” **5**
- b) Justify the statement “Collections of operations that form a single logical unit of work are called Transactions.” **5**
- c) List and explain the commonly accepted security goals for databases. **5**
- d) List the Distribution Design Issues and explain any one in detail. **5**
- e) List and explain basic tasks involved in Data Transformation. **5**

- Qu-2
- a) Show that the two-phase locking protocol ensures conflict serializability, and that transactions can be serialized according to their lock points. **10**
  - b) Explain generic layering scheme for Distributed Query Processing. **10**

- Qu-3
- a) Explain Temporal databases with suitable example. **10**
  - b) List and explain any four OLAP Operations in a cube with suitable example. **10**

- Qu-4
- a) What is the general purpose of the Data-warehouse architecture? Explain the architectural components of Data-warehouse with suitable diagram. **10**
  - b) List various fragmentation strategies in distributed database and explain any one in detail. **10**

- Qu-5
- a) List and explain the types of activities and tasks that compose the ETL process. **10**
  - b) Explain ARIES Algorithm in detail. **10**

- Qu-6 Attempt the following.
- a) Measures of Query Cost. **5**
  - b) Shadow Paging. **5**
  - c) Mobile Databases. **5**
  - d) Factless Fact Table. **5**

\*\*\*\*\*