T. E. (IT) (Sem - IV) (CB)    Date - 21/5/19

(Time: 3 Hrs)    Marks: 80

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

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

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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| 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 |

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

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