

QP Code : **14951**

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. 1 is **compulsory**.
 (2) Solve any **three** questions out of remaining **five**.

1. (a) Explain Factless Fact Table. 5
 (b) Compare OLTP vs OLAP 5
 (c) How does multilevel indexing improve the efficiency of searching an index file? 5
 (d) Explain different types of transparencies in distributed database. 5
2. (a) What are Triggers? Give an example. 10
 (b) Explain Concurrency control in distributed database. 10
3. (a) Draw and Explain Data Warehouse architecture. 10
 (b) Describe the three phases of the ARIES recovery method. 10
4. (a) Find out the data transfer cost of distributed query processing for following queries "For each employee, retrieve the employee name and name of the department for which employee works."
 Site1 : Employee 10

| | | | | | | | | | |
|-------|-------|--------|-----|-------|---------|-----|--------|------|-----|
| Fname | Minit | Laname | SSn | Bdate | Address | Sex | Salary | SSSn | Dno |
|-------|-------|--------|-----|-------|---------|-----|--------|------|-----|

10000 records each record is 100 bytes long.

SSn field is 9 bytes, Fname field is 15 bytes, Dno field is 4bytes, Lname is 15 bytes.

Site2: Department.

| | | | |
|-------|---------|--------|--------------|
| Dname | Dnumber | Mgrssn | Mgrstartdate |
|-------|---------|--------|--------------|

100 records each record is 35 bytes long, Dnumber field is 4bytes, Dname field is 10 bytes, Mgrssn field is 9 bytes. Query is submitted to result site 3. Consider different strategies for executing this query and find which strategy is best using natural join and semijoin.

- (b) Explain with suitable example object identity, object structure and type constructors in OODBs. 10
5. (a) Explain Data loading and its types. 10
 (b) Explain the Operations on files. 10

6. (a) Consider a data warehouse for a hospital, where there are three dimensions: **10**
- (i) Doctor
 - (ii) Patient and
 - (iii) Time
- and two measures:
- (i) Count and
 - (ii) Charge.
- Using the above example describe the following OLAP operations
- (i) Slice
 - (ii) Dice
 - (iii) Rollup
 - (iv) Drilldown
 - (v) Pivot
- (b) What are the different types of SQL injection attacks. **10**
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