

[Time:3 Hours]

[ Marks:80]

Please check whether you have got the right question paper.

- N.B:**
1. Question No.1 is compulsory.
  2. Attempt any Four questions from the remaining Six questions.

- Q1. a) Write short notes on (ant three): 12
1. Shared Nothing Architecture
  2. Metadata
  3. Bloomjoin
  4. Clustering
- b) Compare following (any two) 08
1. ROLAP and MOLAP
  2. OODBMS and ORDBMS
  3. OLAP and Data Mining
- Q2. a) What are the various complex data types available in object Relational DBMS? Explain with suitable example. 08
- b) Define the terms fragmentation and replication in terms of where data is stored and also how the object are uniquely identified in distributed database? 07
- Q3. a) What are frequent item sets? Describe an algorithm for finding frequent itemsets. 08
- b) Explain the features of XML and also differentiate between DTD and XML Schema. 07
- Q4. a) Explain concurrency control and recovery in Distributed Database Management System. 08
- b) What is datawarehouse and why it is needed? Explain ETL (Extraction, Transformation and Loading) process in data warehouse. 07
- Q5. a) Explain various operation of OLAP. 08
- b) Explain ORDBMS Implementation challenges in detail. 07
- Q6. a) Find out the association rules with minimum support 20 percent and confidence atleast 50 percent from the following sample data: 08

Transitions	Items
T1	Pen, Pencil, ink, chalk
T2	Pen, Eraser, Notebook
T3	Pen, Notebook, Eraser, chalk
T4	Pencil, paper, Pen, ink
T5	Ink, pen

- b) Explain Bitmap index and bitmap join index with example. 07
- Q7. a) What is Classification technique in Data Mining? Discuss decision tree based ID3 algorithm for classification. 08
- b) Discuss deadlock detection in a distributed database. 07