

315324

25226

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answer with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) Define Two-Phase Locking protocol.
 - b) State any two benefits of a Distributed Database System.
 - c) Write the syntax for creating on Array Type in SQL.
 - d) List any two types of NoSQL Databases.
 - e) State any two functions of Data Warehouse Tools.
 - f) Differentiate between Throughput and Response Time.
 - g) State any two advantages of Concurrency Control.

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- 2. Attempt any THREE of the following: 12**
- a) Explain the architecture of a Centralized Database System with a neat diagram.
 - b) Compare parallel Database and Distributed Database. (Any four points)
 - c) Explain Table Inheritance in SQL with an example.
 - d) Explain the concepts of structured Vs Unstructured Data with examples.
- 3. Attempt any THREE of the following: 12**
- a) Explain transaction processing in a Parallel Database System.
 - b) Write a MongoDB query using find() function with query Criteria.
 - c) Explain FLWOR expressions in XQuery with syntax.
 - d) Explain classification and clustering in Data Mining.
- 4. Attempt any THREE of the following: 12**
- a) Differentiate between Transaction Server and Data Server.
 - b) Explain Array and Multiset Types in SQL with an example.
 - c) Differentiate between Object-Oriented and Object-Relational Database. (Any four points)
 - d) Compare SQL and NO SOL Databases. (Any four points)
 - e) Write a MongoDB query to insert multiple records into a collection and display them using the find() function.
- 5. Attempt any TWO of the following: 12**
- a) Draw and explain the components of a Data Warehouse.
 - b) Write XQuery to perform Join and Nested Queries on given XML data.
 - c) Explain the basic operation performed in MongoDB Shell with Syntax and example.

6. Attempt any TWO of the following:**12**

- a) Explain Measures of performance in Parallel Database System with examples.
 - b) Explain the Components of Data Lakehouse and its advantages.
 - c) Discuss advantages and disadvantages of distributed Database Systems. (Any three points)
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