315324

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) Use of Non-programmable Electronic Pocket Calculator is permissible.

(7) 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) Enlist different types of concurrency control protocol.

b) Write any two benefits of distributed database system.

c) Define flower expression.

d) Write any four benefits of NoSQL.

e) Enlist characteristics of Data Warehouse.

f) Give syntax for Nested Query.

g) Define Lock and list its categories.

Marks

2. Attempt any THREE of the following: 12

    a) Describe the benefits of distributed database system.

    b) Explain any two complex data types with example.

    c) Explain with example basic operations of MongoDB.

    d) Explain architecture of data warehouse.

3. Attempt any THREE of the following: 12

    a) Explain Table inheritance.

    b) Compare between SQL and NoSQL database system. (Any four points)

    c) Explain any two basic operations with MongoDB shell.

    d) Explain any two architectural design for parallel database.

4. Attempt any THREE of the following: 12

    a) Differentiate between XQuery and XPath. (Any four points)

    b) Explain two tier client server database model with diagram.

    c) Explain any four applications of data mining.

    d) Write output for the following executed on MongoDB shell :–

        i) >New date ("2025/7/8");

        ii) > "Welcome MSBTE" replace ("MSBTE", MongoDB);

    e) Draw and explain distributed database system architecture.

5. Attempt any TWO of the following: 12

    a) Write query to execute find( ) function on collection: Inventory:–

        i) To display all documents where status equals either "A" or "G".

        ii) To display all documents in collection.

        iii) To display all documents where status equals "D".

    b) Define lock. Explain two phase locking protocol with example.

    c) Compare data mining and data warehousing.

Marks

6. **Attempt any <u>TWO</u> of the following:** 12

    a) Explain XML document schema with suitable example.

    b) Compare between parallel and distributed database. (Any six points)

    c) Explain Array and Multiset types in SQL with suitable example.

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