11920

3 Hours / 70 Marks   Seat No.

Instructions : (1) All Questions are *compulsory*.

(2) Answer each next main Question on a new page.

(3) Illustrate your answers 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) Explain the use of two phase locking protocol.

(b) Write any two benefits of distributed database system.

(c) Define complex data types.

(d) Enlist types of functions in SQL.

(e) State the difference between structured versus unstructured data types.

(f) Describe the benefits of No-SQL.

(g) Describe the application of data mining.

2. **Attempt any THREE of the following :**   **12**

(a) Explain Concurrency Control Techniques.

(b) Explain multiset types in SQL.

(c) Compare SQL and No-SQL database system.

(d) Explain XML document schema.

3. Attempt any THREE of the following : **12**

(a) Explain any four operation with Mongo DB with example.

(b) Explain and draw data warehouse life cycle.

(c) Describe BI components framework.

(d) Differentiate between parallel & distributed databases.

4. Attempt any THREE of the following : **12**

(a) Explain basic datatypes and arrays in MongoDB.

(b) Describe mobile databases and digital database.

(c) Explain the characteristics of Big data.

(d) Explain the use of R-programming and also give the various applications where R-programming use.

(e) Explain table inheritance in SQL.

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

(a) Explain object identity and reference types in SQL with example.

(b) Explain the association rule in data mining. Explain application of association rule mining with example.

(c) Describe Hadoop. Explain architecture of Hadoop.

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

(a) Explain concurrency control with locked based protocol.

(b) Explain flower experssions and nestead queries in Xquery.

(c) Write query to excate find()function on collection : Inventory.

   (i) to display all document in collection

   (ii) to display all document where status equals "A" and qty is less than 40.

   (iii) to display all documents where status equals "A" and qty is less than 40 or item starts with character S.

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