

22521

**21222**

**3 Hours / 70 Marks**

Seat No.

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15 minutes extra for each hour

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Figures to the right indicate full marks.
  - (4) Assume suitable data, if necessary.
  - (5) Preferably, write the answer in sequential order.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) Enlist any four datatypes of MongoDB.
- (b) Define term Big Data.
- (c) State aggregation.
- (d) Enlist four types of Parallelism.
- (e) Define Concurrency control.
- (f) State Data mart.
- (g) Give syntax and example for Nested query.

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

**12**

- (a) Explain three-tier client server database model with diagram.
- (b) Compare between Xpath and Xquery (any four).
- (c) Explain benefits of NOSQL (any four).
- (d) Explain oracle cloud technology.

- 3. Attempt any THREE of the following : 12**
- (a) Explain applications of data mining (any four).
  - (b) Describe object identity and reference types in SQL.
  - (c) Describe working of Lock based Protocol for concurrency control.
  - (d) Compare between Structured and Unstructured data (any four).
- 4. Attempt any THREE of the following : 12**
- (a) Compare between HBase and Hive (any four).
  - (b) Describe Business Intelligence framework.
  - (c) Describe Hadoop architecture with diagram.
  - (d) Explain benefits of distributed database system (any four).
  - (e) Describe structure of XML with example.
- 5. Attempt any TWO of the following : 12**
- (a) Define Join. Explain types of joins in SQL with example.
  - (b) Describe approaches for Machine learning : (any two).
  - (c) Explain following terms of MongoDB.
    - (i) MongoDB Shell
    - (ii) MongoDB Client
- 6. Attempt any TWO of the following : 12**
- (a) Explain types of NOSQL databases (any three).
  - (b) Explain array and Multiset types in SQL with example.
  - (c) Describe Data warehousing architecture with diagram.
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