

22521

22232

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 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.
 - (7) Preferably, write the answers in sequential order.

Marks

1. Attempt any FIVE of the following :

10

- (a) Enlist different types of concurrency control protocols.
- (b) Enlist reference types in SQL.
- (c) State types of NoSQL databases.
- (d) Enlist characteristics of data warehouse.
- (e) Define Big Data.
- (f) Enlist different sort functions.
- (g) State any two data types used in Mongo DB.



- 2. Attempt any THREE of the following : 12**
- (a) Describe the benefits of Distributed Database System.
 - (b) Compare between SQL and NoSQL database system (any 4 points).
 - (c) What is the use of find() in Mongo DB ? Explain it with suitable example.
 - (d) Explain structured types in SQL with suitable example.
- 3. Attempt any THREE of the following : 12**
- (a) State different approaches for Machine Learning.
 - (b) Compare between Structured and Unstructured Data (any 4 points).
 - (c) Explain following (any one) : (i) Cloudera (ii) Oracle Cloud
 - (d) State key differences between data mining and data warehouse (any 4 points).
- 4. Attempt any THREE of the following : 12**
- (a) Explain Locked Based Protocols.
 - (b) Explain with example basic operations of MongoDB.
 - (c) Explain classification and clustering in Data Mining.
 - (d) Write short note on Hadoop.
 - (e) Draw and explain Data Warehousing Life cycle.
- 5. Attempt any TWO of the following : 12**
- (a) Consider following input data for your Map Reduce Program.
'NoSQL is better than SQL.'
Draw Map Reduce Architecture and explain its phases.
 - (b) Explain Array and Multiset types in SQL with example.

- (c) Explain Object and Object Identity. Write SQL query for following table.

Class : Library
B_id
B_name
S_id
DOI
DOR
Book Issue
Book Return

6. Attempt any TWO of the following :

12

- (a) Compare between Parallel and Distributed Database (any six points).

- (b) Consider the tables given below :

Emp (E_id, E_name, job_id, Salary, dept_id)

Dept (dept_id, dept_name, location)

- (i) Find all employees who locate in 'London' and whose salary is greater than 60,000 INR.
- (ii) Display department information of those employee whose job_id = 20.
- (iii) Find the departmental name of employee whose salary is greater than average salary.

Write XML expression / join for above statements.

- (c) Explain steps used to perform data analysis in R Programming.
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