



(Time: 2½ hours)

Total Marks: 75

- N. B.: (1) All questions are compulsory.
 (2) Make suitable assumptions wherever necessary and state the assumptions made.
 (3) Answers to the same question must be written together.
 (4) Numbers to the right indicate marks.
 (5) Draw neat labeled diagrams wherever necessary.
 (6) Use of Non-programmable calculators is allowed.

1. Attempt any three of the following: 15
 - a. Explain the three aspects of data i) Data at rest ii) Data in motion iii) Data in many forms.
 - b. List the Big data sources and also explain the challenges of big data.
 - c. Explain Brewer's theorem along with a neat diagram.
 - d. How consistency can be implemented at both read and write operation levels explain.
 - e. List the categories of NoSQL databases. Also explain the ways in which MongoDB is different from SQL.
 - f. What is NoSQL? Explain the advantages of NoSQL databases.
2. Attempt any three of the following: 15
 - a. Explain `_id`, capped collection and Binary JavaScript Object Notation (BSON).
 - b. What is a polymorphic schema? Explain the various reasons for using a polymorphic schema.
 - c. How can you create a collection explicitly? Explain about selector and projector with example.
 - d. What is the use of `findOne()` method? Briefly explain about `explain()` function.
 - e. Explain Master Slave Replication with a neat diagram.
 - f. Explain the components of a sharded cluster.
3. Attempt any three of the following: 15
 - a. Write a short note on WiredTiger storage engine.
 - b. Explain the concept of GridFS – The MongoDB File System.
 - c. What is sharding? List and explain the sharding limitations.
 - d. Explain MongoDB limitations from security perspective. Also give an overview about Read and Write limitations.
 - e. Write a short note on Deployment in MongoDB.
 - f. What are the tips need to be considered when coding with the MongoDB database.
4. Attempt any three of the following: 15
 - a. Explain about TimesTen In-Memory Database with a neat diagram.
 - b. Explain about Solid State Disk.
 - c. Discuss the oracle 12c In-Memory Database architecture with a neat diagram.
 - d. What is jQuery? Explain jQuery element selector, id selector and class selector with example.
 - e. What is an Event? Explain with syntax `fadeIn()` and `fadeOut()` jQuery methods.
 - f. Explain the features supported by jQuery.

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5. Attempt any three of the following:

15

- a. What is the use of stringify method? Explain with syntax.
 - b. Explain the six members of the web storage Interface.
 - c. Explain the structure of Hypertext Transfer Protocol (HTTP) – Request.
 - d. Explain the JSON Grammar.
 - e. Give an overview about JavaScript Object Notation (JSON). Also explain about JSON tokens.
 - f. Explain about JSON parsing with syntax.
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