(2½ Hours)
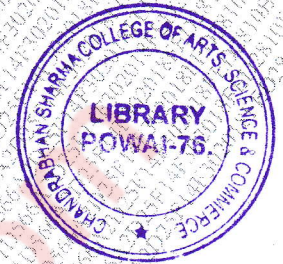
[Total Marks: 75]

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:**
a. What is Big Data? List the different uses of Big Data.
b. Briefly explain how is MongoDB different from SQL.
c. What is MongoDB? Explain the features of MondoDB.
d. Explain how Volume, Velocity and Variety are important components of Big Data.
e. Write a short note on Cap theorem.
f. Discuss the various categories of NoSQL Databases.

2. **Attempt *any three* of the following:**   15
a. Explain Binary JSON(BSON).
b. Explain with an example the process of deleting documents in a Collection.
c. Discuss the various tools in MongoDB..
d. Explain the concept of Sharding in detail.
e. Differentiate between Single Key and Compound Index.
f. Write a short note on Master/Slave replication of MongoDB.

3. **Attempt *any three* of the following:**   15
a. Discuss the fields used for Sharding.
b. List and explain the limitations of Indexes.
c. Explain the MongoDB limitations from security perspective.
d. Write a short note on Deployment.
e. Define Monitoring. Explain the factors to be considered while using Monitoring Services.
f. What is Data Storage Engine? Differentiate between MMAP and Wired storage engines.

4. **Attempt *any three* of the following:**   15
a. Define In-Memory Database. What are the techniques used in In-Memory Database to ensure that data is not lost?
b. Explain how does Redis uses disk files for persistence.
c. What is Berkeley Analytics Data Stack? Explain its components.
d. What is an Event? State the different types of Events in jQuery.
e. Write a short note on jQuery CSS method .
f. State the features of jQuery.

5. **Attempt *any three* of the following:**   15
a. Explain the JSON Grammar.
b. Differentiate between XML and JSON .
c. Explain Request Headers.
d. Write a short note on JSON Parsing.
e. Explain the stringify object for JSON Object.
f. Discuss the JSON values.

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