



# PRESIDENCY UNIVERSITY

BENGALURU

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## Mid - Term Examinations – October 2025

Date: 09-10-2025

Time: 09.30am to 11.00am

|                      |                                       |                 |
|----------------------|---------------------------------------|-----------------|
| School: SOCSE        | Program: B.Tech - CAI                 |                 |
| Course Code :CAI3401 | Course Name:Big Data Analytics for AI |                 |
| Semester: V          | Max Marks: 50                         | Weightage: 25 % |

| CO - Levels | C01 | C02 | C03 | C04 | C05 |
|-------------|-----|-----|-----|-----|-----|
| Marks       | 26  | 24  |     |     |     |

### Instructions:

- (i) Read all questions carefully and answer accordingly.
- (ii) Do not write anything on the question paper other than roll number.

### Part A

Answer ALL the Questions. Each question carries 2marks.

5Q x 2M=10M

|   |  |         |    |     |
|---|--|---------|----|-----|
| 1 | Describe big data analytics                                | 2 Marks | L2 | C01 |
| 2 | Describe any four AI technologies benefiting from Big Data | 2 Marks | L2 | C01 |
| 3 | Describe two main components of Hadoop Ecosystem           | 2 Marks | L1 | C01 |
| 4 | Describe types of NoSQL database system                    | 2 Marks | L1 | C02 |
| 5 | Describe Advantages and Limitations of NoSQL               | 2 Marks | L2 | C02 |

## Part B

**Answer the Questions.**

**Total Marks 40M**

|           |           |   |                 |           |            |
|-----------|-----------|---|-----------------|-----------|------------|
| <b>6.</b> | <b>a.</b> | Discuss the role of Big data in AI applications   | <b>10 Marks</b> | <b>L2</b> | <b>CO1</b> |
|           | <b>b.</b> | Discuss the key AI technologies benefiting from big data  | <b>10 Marks</b> | <b>L2</b> | <b>CO1</b> |
| <b>Or</b> |           |   |                 |           |            |
| <b>7.</b> | <b>a.</b> | Describe key components of the big data ecosystem with examples   | <b>10 Marks</b> | <b>L2</b> | <b>CO1</b> |
|           | <b>b.</b> | Compare the Hadoop and spark architecture with reference to processing, model, performance, and data handling | <b>10 Marks</b> | <b>L2</b> | <b>CO1</b> |

|           |           |  |                 |           |            |
|-----------|-----------|--|-----------------|-----------|------------|
| <b>8.</b> | <b>a.</b> | Discuss the processing layers supported by Hadoop Distributed File System                          | <b>10 Marks</b> | <b>L2</b> | <b>CO2</b> |
|           | <b>b.</b> | Discuss the need of NoSQL database systems and their types and key characteristics                 | <b>10 Marks</b> | <b>L2</b> | <b>CO2</b> |
| <b>Or</b> |           |  |                 |           |            |
| <b>9.</b> | <b>a.</b> | Compare MongoDB with traditional RDBMS. Why is MongoDB considered better for Big Data applications | <b>10 Marks</b> | <b>L2</b> | <b>CO2</b> |
|           | <b>b.</b> | Explain how Cassandra handles read and write operations.   | <b>10 Marks</b> | <b>L2</b> | <b>CO2</b> |