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# PRESIDENCY UNIVERSITY

BENGALURU

## Mid - Term Examinations – October 2025

**Date:** 09-10-2025

**Time:** 09.30am to 11.00am

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

<b>CO - Levels</b>	<b>CO1</b>	<b>CO2</b>	<b>CO3</b>	<b>CO4</b>	<b>CO5</b>
<b>Marks</b>	<b>26</b>	<b>24</b>			

**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**

<b>1</b>	Describe big data analytics	<b>2 Marks</b>	<b>L2</b>	<b>CO1</b>
<b>2</b>	Describe any four AI technologies benefiting from Big Data	<b>2 Marks</b>	<b>L2</b>	<b>CO1</b>
<b>3</b>	Describe two main components of Hadoop Ecosystem	<b>2 Marks</b>	<b>L1</b>	<b>CO1</b>
<b>4</b>	Describe types of NoSQL database system	<b>2 Marks</b>	<b>L1</b>	<b>CO2</b>
<b>5</b>	Describe Advantages and Limitations of NoSQL	<b>2 Marks</b>	<b>L2</b>	<b>CO2</b>

## 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>

**Or**

<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>

**Or**

<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>