Name:.....
Roll No:.....

MAR ATHANASIUS COLLEGE OF ENGINEERING (AUTONOMOUS),
KOTHAMANGALAM - 686666
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.TECH FIRST SERIES EXAMINATION, AUGUST 2026 (S5 AIML)

B24AM3T01 BIGDATA PROCESSING

Max. Marks: 40 Duration: 1.5 Hours

PART A

Answer all questions. Each question carries 3 marks.

1. You are hired as a data architect for an e-commerce company. Apply your knowledge of the Hadoop Ecosystem to propose a suitable combination of tools for the following tasks:
   (a) Ingesting clickstream logs from web servers
   (b) Storing the raw data reliably
   (C)Running SQL-like queries for weekly sales reports CO1
2. A social media company generates 600 TB of user activity data daily. Apply your understanding of the 5 V's of Big Data to classify this scenario and justify which 'V' presents the greatest technical challenge for this company. CO1
3. "HDFS is not a general purpose distributed filesystem". Justify the statement. CO2
4. Illustrate auto-sharding in HBASE. CO2

PART B

Answer all questions. Each question carries 14 marks.

5. (a) Describe the Hadoop ecosystem, elaborating on its foundational pillars. Illustrate how these core components interact during a typical batch processing job. CO1 (7 marks)
   (b) Identify and describe a minimum of three higher-level abstraction tools from the Hadoop ecosystem designed for data orchestration, system coordination, or integration. For each tool, explain its specific operational role with a suitable use case. CO1 (7 marks)
6. (a) Demonstrate the anatomy of file write and explain how high availability is ensured CO2(7 marks)
   (b) Explain the function of region servers in the HBASE architecture. Is HBASE suitable for real-time applications? validate your answer. CO2 (7 marks)

VISION

"Mould competent professionals to serve as valuable resources for society in pursuit of excellence."

MISSION

- Provide quality education tuned to the challenging phases of technology.
- Mould disciplined and Socially Committed engineers capable of professional leadership.
- Promote theoretical and practical understanding,along with critical thinking and logical reasoning.