

Trim: Sep – Nov 24		
Maximum Marks:50	Examination: ETE Exam	Date: 13/01/2025
Duration: 3 Hrs		
Programme code: 17	Class: SY	Trimester: V
Programme: MBA BADS Major		
College: K. J. Somaiya Institute of Management	Name of the department/Section/Center: DST	
Course Code: 217P01C512	Name of the Course: Big Data technologies	
Instructions: 1. Question No. 1 is Compulsory		
2. Solve any three questions from Q2 to Q5.		

Question No.		Max. Marks
Q1	<p>A retail chain, <i>ShopMart</i>, has collected extensive customer transaction data over the last five years. Despite having this data, the company struggles with declining customer retention and inefficient inventory management. They want to leverage big data analytics to address these challenges.</p> <ol style="list-style-type: none"> <li>What types of analytics (descriptive, predictive, and prescriptive) should <i>ShopMart</i> use to address customer retention? Explain why. [7M]</li> <li>Suggest an approach to improve inventory management using big data tools. [7M]</li> <li>Identify potential ethical concerns related to data usage and propose measures to address them. [6]</li> </ol>	20
Q2	Write the evolution of database management systems to modern big data platforms.	10
Q3	Write a note on Hadoop.	10
Q4	<p><i>QuickDeliver</i>, a fast-growing food delivery startup, has been experiencing scalability issues with its traditional relational database. The database struggles to handle the high volume of user data, real-time order updates, and the unstructured customer feedback that comes in the form of text, images, and ratings. As the company expands to new cities, it needs a database solution that can:</p> <ul style="list-style-type: none"> <li>Scale horizontally to handle millions of users.</li> <li>Manage diverse data types (structured and unstructured).</li> <li>Support low-latency queries to improve user experience.</li> </ul> <p>The CTO has proposed migrating to a NoSQL database but is uncertain about the choice between document-based, column-family, key-value, or graph databases.</p> <p>Compare the different types of NoSQL databases and recommend the most suitable option for <i>QuickDeliver</i>. Justify your choice.</p>	10
Q5	Explain how Big Data is used in recommendation systems, such as those used by e-commerce platforms or streaming services.	10