TCS–351

B. TECH. (CSE) (THIRD SEMESTER)
END SEMESTER EXAMINATION, Dec., 2023

FUNDAMENTALS OF CLOUD COMPUTING AND BIG DATA

Time : Three Hours

Maximum Marks : 100

Note : (i) All questions are compulsory.

(ii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.

(iii) Total marks in each main question are **twenty**.

(iv) Each sub-question carries 10 marks.

1. (a) VMware Carbon Black, an arm of VMware, used managed service Amazon Kinesis Data Streams to build a scalable, cost-effective data streaming solution that enhances operations and supports growth. Evaluate Cloud Computing On Demand Services from perspective of above mentioned organization. (CO1)

(b) Database company ClickHouse Inc. developed and launched ClickHouse Cloud in 1 year using AWS services, including Amazon EKS, Amazon EC2 Spot Instances, and Savings Plans. Evaluate privacy of Cloud Computing from perspective of above mentioned organization.

(CO1)

(c) Biz2Credit accelerated the scaling of Kubernetes clusters, automated processes, optimized server instances, and improved uptimes by using Amazon EKS, resulting in improved uptimes, lower costs, and faster customer onboarding. Evaluate Cloud Computing Data Storage Services from perspective of above mentioned organization.   (CO1)

2. (a) WirelessCar virtually removed cold starts and improved the performance of its connected mobility services at no extra cost by embracing AWS Lambda SnapStart for Java. Analyze SAP Cloud Platform from perspective of above mentioned organization.   (CO2)

(b) Katalon used Amazon MSK and AWS Lambda to build a managed, serverless infrastructure that sped up time to market and cut costs for customers. Analyze the Backend Development Roadmap from the perspective of above mentioned organization. -   (CO2)

(c) WorkApps transformed its broadcast messaging solution, follow.us, using Amazon SQS, AWS Media Services, and Amazon Translate, ensuring seamless integration, high scalability, and the ability to broadcast millions of messages in second. Analyze the Frontend Development Roadmap from the perspective of above mentioned organization.   (CO2)

3. (a) Sony India Software Centre scaled its Cloud Data Platform by migrating to Amazon Redshift RA3 instances, boosting query performance, reducing management time, and increasing employee satisfaction. Analyze Eucalyptus Architecture, Features, Operation Modes and Advantages from the perspective of above mentioned organization.

(CO3)

(b) Zoomcar supported its growing data volumes by implementing data analytics services from AWS, including Amazon Redshift, Amazon EMR, Amazon S3, Amazon Athena, and AWS Glue, empowering faster decision-making, efficient operations, and personalized customer experiences. Analyze hypervisor from the perspective of above mentioned organization. (CO3)

(c) YOUGotaGift consolidated its infrastructure to improve the reliability and performance of its platform and improve innovation. This has resulted in new products, partnerships, and exponential growth. Analyze Amazon Machine Image Types and Properties from the perspective of above mentioned organization. (CO3)

4. (a) Using fully managed AWS services, financial technology company ekonoo SA achieved regulatory approval for its pension management solution and can focus on delivering value to its customers. Analyze Big Data and data Mining Applications, Advantages and Disadvantages from the perspective of above mentioned organization. (CO4)

(b) Luxury fashion company Tapestry built a scalable IaC platform to seamlessly deploy modernized workloads in a nimble, consistent, and repeatable manner for security and governance, helping the company reduce deployment times, maintain security and compliance protocols, and drive innovation. Analyze the types of Machine Learning Algorithms, Life Cycle and Advantages from the perspective of above mentioned organization. (CO4)

(c) Fintech lending platform Aro increased its efficiency using managed search clusters on Amazon OpenSearch Service, creating more capacity

to innovate. Analyze the Federated Learning and approaches to sentiment analysis, Types and Challenges from the perspective of above mentioned organization. (CO4)

5. (a) Travis Perkins built on Amazon Web Services (AWS) as part of its strategic effort to create an agile and innovative business and to free data siloed in legacy infrastructure for better insights. Analyze the Data Fusion, Data Integration Techniques and Natural Language Processing (NLP) Components, Phases and Applications from the perspective of above mentioned organization. (CO5, CO6)

(b) Moody's Senior Vice President of Cloud Engineering, Divya Elaty, discusses how Moody's leverage AWS services like AWS Glue, Amazon Dynamo DB, Amazon S3, and AWS Step Functions to build modern data solutions and custom in-house tools to meet the company's data needs. Analyze AWS Lambda, AWS Elastic Beanstalk, Amazon Route 53, AWS VPC, and Amazon Glacier Services from the perspective of above mentioned organization. (CO5, CO6)

(c) FOX has improved its marketing and advertising insights and ML capabilities by building a unified data solution using Amazon S3, Amazon Rekognition, and other cloud technology. Analyze AWS Elastic Disaster Recovery and SWOT analysis from the perspective of above mentioned organization. (CO5, CO6)