



VIT
Vellore Institute of Technology

Slot: B2+TB2

School of Computer Science Engineering and Information Systems

Winter Semester 2024-2025

Continuous Assessment Test - I

Programme Name & Branch: B.Tech - Information Technology

Course Name & code: Cloud-Computing - BITE412L

Class Number (s): VL2024250502694, VL2024250502699

Faculty Name (s): Dr. M.P.VANI, Dr. MSUDHA

Exam Duration: 90 Min.

Maximum Marks: 50

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyze, 5 - Evaluate, 6 - Create)
- Course Outcomes
CO1 - Apply the Virtualization techniques for Cloud Computing Services
CO2 - Compare, contrast, and evaluate the fundamental trade-offs in planning the multi-cloud system
CO5 - Analyze and solve industry-related problems using modern tools

Q.No.	Question	Max Marks	CO	BL
1.	"Consider the cloud architecture of a popular video streaming service like Netflix. Identify and describe the roles of the front-end, back-end, and middleware components in this system. How do these components work together to ensure a seamless user experience? Note- Provide specific examples to illustrate each component"	10	CO1	BL 4
2.	Siemens, a global technology and engineering company, operates in various sectors, including energy sector. The energy sector faces challenges with numerous alerts and alarms in power plants, leading to increased operational complexity. They faced challenges like- • High volume of alerts resulted in alert fatigue and reduced efficiency. • Difficulty in distinguishing critical alerts from less urgent ones, impacting the ability to respond promptly to issues. Taking into consideration of the above information, - Discuss about its implementation, Technological Impact, user experience and future prospects.	10	CO1	BL 4
3.	a.) Distinguish between public cloud and private cloud with suitable example? b.) Do you think hybrid cloud and community cloud can be used in an Multinational organization if Yes justify your answer	1	CO2	BL 2

4.	A mid-sized healthcare organization is transitioning its patient data management system to the cloud to improve accessibility, scalability, and data analytics capabilities. The organization is concerned about compliance with healthcare regulations, data security, and ensuring uninterrupted service availability. Based on the above strategy - Outline the specific responsibilities of the cloud provider, cloud consumer, and regulators in ensuring data security and regulatory compliance. Illustrate how the organization utilizes the built-in compliance features of the provider to comply with healthcare regulations. L) What actions should the consumer implement to safeguard sensitive information and ensure continuous service delivery among the cloud parties?	10	CO5	BL4
5.	A global e-commerce company plans to deploy a multi-functional server to optimize resource utilization and reduce operational costs. The server needs to host distinct services such as, an e-commerce application server, a recommendation engine powered by AI, a customer database, a real-time analytics platform, a secure payment gateway, and a staging environment for development. Each service requires a different operating system and unique resource configurations. Demonstrate how to design a hardware virtualized server that supports these six virtual machines (VMs) using hypervisor architectures and illustrate how workload isolation ensures the secure and uninterrupted operation of the payment gateway, even during high traffic on the analytics platform.	10	CO1	BL4