



VIT

Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

REG.NO.:

SLOT:G1+TG1

SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS ASSESSMENT TEST - II
FALL SEMESTER 2025-2026

Programme Name & Branch : B.Tech CSE and Specialization
Course Code and Course Name : BCSE355L and Cloud Architecture Design
Faculty Name(s) : Common to All
Class Number(s) : Common to All
Date of Examination : 11.10.2025
Exam Duration : 90 minutes **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 – Analyse, 5 – Evaluate, 6 – Create)
- Course Outcomes:

CO3: Optimize cost and performance by selecting appropriate AWS services and utilizing cost-effective resource management strategies

CO4 Configure and manage advanced AWS networking features, storage solutions, database technologies, and compute resources.

Q. No	Question	M	CO	BL
1.	Two departments of a university maintain separate VPCs. Department A hosts the student portal, while Department B manages the exam system. Both applications require private communication without using the internet. i. Explain how VPC Peering can be configured to enable connectivity between the two VPCs, highlighting the steps related to establishing the peering connection and configuring security group rules. ii. Compare Site-to-Site VPN with VPC Peering in terms of security, latency, and scalability. iii. Mention one limitation of VPC Peering that makes Site-to-Site VPN a preferable option. iv. With the help of a neat diagram, represent the architecture of both VPC Peering and Site-to-Site VPN.	10	4	4
2.	An online learning platform stores student profiles, course content, and exam results in a relational database hosted on Amazon RDS. During normal operations, the system needs to ensure high availability so that the student portal remains functional even in the event of infrastructure failure. However, during exam periods, the platform experiences a sharp increase in read requests, as thousands of students simultaneously access progress reports and test results. As a cloud architect, explain how RDS Multi-AZ deployments and	10	4	3



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	RDS Read Replicas can be combined to meet these requirements. Justify the role of each feature, and illustrate your answer with a neat diagram showing the primary database, standby instance across Availability Zones, and one or more read replicas serving high-volume read traffic.			
3.	A gaming application needs to store player profiles, scores, and session data with millisecond latency, and the architects are considering Amazon DynamoDB for this purpose. Discuss why DynamoDB is more suitable than RDS for this use case, and describe how partition keys and sort keys help in organizing data efficiently within DynamoDB. Further, mention one trade-off of using DynamoDB compared to RDS. Finally, illustrate your answer with a neat diagram of DynamoDB showing items, attributes, and partitioning.	10	4	4
4.	In a cloud environment, organizations must ensure compliance by monitoring API activities and configuration changes. Explain how logging services can be used to track user actions and provide details on who made a change, when it occurred, and from where. Describe how configuration management services can record resource changes and enforce compliance policies, such as encryption requirements. Mention one benefit of integrating logging with configuration management for auditing purposes, and illustrate your answer with a neat diagram showing event logging, configuration tracking, and compliance enforcement.	10	3	3
5.	An ed-tech startup is preparing for rapid growth and aims to control costs, strengthen security, and improve fault tolerance without relying on additional cloud consultants. Explain how AWS Trusted Advisor can assist in identifying opportunities for cost optimization. Describe the ways in which Trusted Advisor provides security and performance checks. Finally, discuss the importance of regularly reviewing the Trusted Advisor dashboard and how it contributes to long-term cloud governance and operational efficiency.	10	3	2
