



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

Programme Name & Branch : B.Tech CSE and Specialization Programmes
Course Code and Course Name : BCSE355L – Cloud Architecture Design
Date of Examination : 23.08.2025
Exam Duration : 90 minutes
Maximum Marks: 50

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)

CO1: Demonstrate an indepth understanding of AWS Cloud architecture services and design patterns

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

Q. No	Question	M	CO	BL
1.	Elucidate the essential elements and advantages of AWS Global Infrastructure. In what ways do its design principles enhance scalability, reliability, and compliance within the realm of cloud computing?	10	CO1	BL1
2.	A university is transitioning its student portal, research data, and administrative systems to AWS. In your capacity as the cloud architect, you are responsible for formulating an IAM strategy that guarantees secure, role-based access for students, faculty, and administrative personnel. Discuss how IAM can be utilized to regulate access control in this context. Include illustrations of policies, roles, and best practices that facilitate scalability and compliance. Additionally, present an IAM Architecture on AWS (Conceptual Diagram).	10	CO1	BL2
3.	Using AWS EC2 instances, Indian Railways is updating its scheduling and ticketing system. The system is generally active throughout the year, with predictable peak loads during festival and holiday seasons. As a cloud architect, determine whether On-Demand, Reserved, or Spot Instances are appropriate for this workload. Provide a hybrid EC2 pricing plan that guarantees scalability, cost effectiveness, and continuous service during periods of high travel demand. Explain your decisions using examples.	10	CO4	BL2
4.	You are in the process of designing a digital library management system that will be hosted on AWS for a university campus. This system needs to manage the cataloging of book metadata, store scanned copies of rare manuscripts, allow multiple users to access shared reading materials, and support daily transaction logs for check-ins and check-outs. Assess the applicability of Amazon EBS and Amazon EFS in this context. Compare their performance, access models, scalability, and pricing. Suggest suitable storage types for each use case and provide justification for your recommendations.	10	CO4	BL2
5.	A bank is building a secure system on AWS with five parts: Web Tier – customer logins, App Tier – transactions and loans, Database Tier – stores data, Monitoring Tier – checks system health, and Admin Tier – used by staff. The bank wants each part to be in its own section (subnet) inside a private network (VPC). They also want to save some space for future needs. a) Why use separate subnets? b) How would you split the VPC into five subnets (no IPs)? c) Which parts go in public subnets? Which in private? d) Why save a subnet for later?	10	CO4	BL3