



SCHOOL OF COMPUTER SCIENCE AND ENGINEERING
CONTINUOUS ASSESSMENT TEST - I
FALL SEMESTER 2026-2027

Programme Name & Branch : B.Tech- CSE and Specialization Programmes
Course Code and Course Name : BCSE355L – Cloud Architecture Design
Date of Examination : 09-AUG-2026
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s): Answer All Questions

CO1- Demonstrate an in-depth understanding of AWS Cloud architecture, services, and design patterns.

CO4- Develop proficiency in selecting appropriate AWS services and resources to meet specific business requirements

Q. No	Question	M	CO	BL
1.	CloudEdu Solutions is designing its AWS environment and wants to enforce strict access control using IAM. The company has different categories of users with distinct responsibilities: - The Developers group should be allowed to start and stop EC2 instances but must not have permission to delete them. - The Admins group should have unrestricted access to all AWS resources. - The Interns (individual users) should not be given permanent permissions. Instead, they must assume a temporary IAM role that grants them read-only access to S3 buckets. Explain how IAM users, groups, roles, and policies should be connected to enforce these requirements. Illustrate your answer with a diagrammatic representation showing the relationship between users, groups, roles, and policies, and describe how this structure ensures secure and efficient access control.	10	CO1	1
2.	A logistics company experiences delays in delivering parcels from its central warehouse in Mumbai to customers worldwide. To improve delivery speed, the company establishes regional distribution centers closer to customers while retaining the Mumbai warehouse as the primary storage facility. a) Correlate the above logistics architecture with the AWS content delivery architecture by identifying the AWS Global infra components represented by the central warehouse and regional distribution centers. b) Explain the request flow and the benefit of this architecture when a requested parcel is unavailable at the nearest regional distribution center.	10	CO1	2
3.	An online shopping application receives a massive surge in customer traffic during a festive sale. The company expects traffic to increase and decrease continuously throughout the day while ensuring uninterrupted service for all customers. Recommend an AWS solution that maintains application availability while optimizing infrastructure cost. Describe the sequence of events that takes place when customer traffic suddenly doubles with neat diagram	10	CO4	3
4.	A multi-specialty hospital stores patient records, MRI scans, X-ray images, and laboratory reports in Amazon S3.	10	CO4	2



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SLOT: A2+TA2

	- Recent patient records are accessed frequently. - Records older than six months are accessed occasionally. - Medical records older than five years are retained only to satisfy legal requirements and are rarely accessed. - The hospital wants to reduce storage costs without affecting the availability of frequently accessed data. Recommend suitable Amazon S3 storage classes for each category of medical records with appropriate justification with comparison. (6 Marks) Illustrate a suitable Amazon S3 Lifecycle Policy that automatically moves the data between storage classes over time. (4 Marks)			
5.	A bank hosts an online banking application in AWS. Customers should access only the web application, while the application logic and customer database must remain isolated from the Internet. Recommend a suitable VPC design for the above application. Include the placement of resources and Internet connectivity in your answer with neat diagrams and justify the components used.	10	CO4	3
