

Vellore Institute of Technology
SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS

CONTINUOUS ASSESSMENT TEST-1

FALL SEMESTER 2025-2026

SLOT: A1+TA1

Programme Name & Branch : BTech & Information Technology
 Course Code and Course Name : BCSE355L & Cloud Architecture Design
 Faculty Name(s) : Prof. Jagannathan J, Prof. Mohanraj G and Prof. Jagadeesan S
 Class Number(s) : VL2025260105142, 134,135
 Date of Examination : 17-08-2025 & FN
 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)

CO1. Demonstrate an in-depth 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	Questions	M	CO	BL
1.	EduSpark, a growing edtech company, is planning to launch an online learning platform offering video courses, quizzes, and personalized learning paths. With a small tech team, they want to concentrate on building engaging content and user experience rather than managing servers or backend infrastructure. They are exploring three options: Option A involves renting virtual machines, storage, and networking resources, while handling all software installations and configurations themselves; Option B uses a cloud-based development platform with built-in tools for coding, testing, and deployment, removing the need to manage hardware or runtime environments; and Option C subscribes to a fully managed learning management system (LMS), where they can upload course materials and start teaching immediately with no technical setup. Consider the above-mentioned scenario, identify the cloud service model for each option, and explain the reasoning behind your choices.	10	1	1
2.	A mid-sized company is moving its internal applications to AWS. The IT team manages all cloud resources, but employees from different departments Sales, HR, and Finance need access to different AWS services. Right now, permissions are set manually for each person, which takes time and often leads to mistakes. To protect sensitive			



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	data and meet compliance standards, the company needs a secure and efficient way to give the right people access to the right resources. Given the scenario, describe how IAM Users, Groups, and Policies can be used together to manage permissions efficiently for different departments.	10
3	CloudCorp, a growing tech company, is moving to AWS, and each department has specific needs: Web Development needs a cost-effective general-purpose setup for websites, Data Analytics needs high CPU power, Research & AI needs GPUs for machine learning, the Database Team needs memory-optimized systems for fast queries, and the Media Department needs storage-optimized systems for streaming large videos. Consider the above-mentioned scenario, assign appropriate AWS EC2 instance families to each department based on their requirements.	10
4.	Considering the EduSpark scenario mentioned in Q.No.1, explain Elastic Load Balancer (ELB) in AWS, describe its deployment types such as Application Load Balancer, Network Load Balancer, Gateway Load Balancer, and justify.	10
5	MediCare Plus, a healthcare startup, is launching an online patient portal that will allow users to book appointments, access medical records, and communicate with doctors. As a cloud architect, describe the components and layout of an AWS VPC design for MediCare Plus, including how public and private subnets, route tables, and security groups are organized.	10
