

Name & Branch
 Code and Course Name
 Name(s)
 Number(s)
 of Examination
 Duration

: BTECH [BIT, BDE, BYB]
 : BCSE355L & Cloud Architecture Design
 : Dr.R.Rathi & Dr.Muthamil Selvan
 : VL2026270102527, VL2026270102530
 : 30/09/2026 11:00 Am to 12:30.pm
 : 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: (Type the CO statements covered in this question paper. Use the CO number as per the syllabus copy)
 - CO 3. Optimize cost and performance by selecting appropriate AWS services and utilizing cost-effective resource management strategies.
 - CO 4. Configure and manage advanced AWS networking features, storage solutions, database technologies, and compute resources.

Q.No	Question	M	CO	BL
1.	A university requires its learning portal to be accessible over the internet, while faculty grading applications and student databases must remain protected. Everyone in the campus must securely access the appropriate university applications. As the cloud administrator, design an Amazon VPC architecture for the learning management system. Explain the placement of the public-facing load balancer, application servers, and student database in appropriate subnets. Describe the required route tables and security group rules for the same.	10	4	4
2.	A startup stores customer and order data in a relational database hosted in AWS. As the company grows to 300 employees and serves more customers, reporting queries slow down the application during peak hours. A database failure interrupts order processing, and an employee accidentally deletes important order records. As an AWS solutions architect, identify the appropriate managed database service and propose a deployment design that improves reporting performance, keeps the application available during a database failure, and allows deleted records to be recovered. Explain the purpose of each feature you recommend.	10	4	3
3.	A digital newspaper organisation uses a cloud-native relational database to store article details, subscriber information, and subscription transactions. During breaking news events, traffic increases sharply, causing slow article searches and subscription processing. At night, database activity falls significantly, but the company continues paying for capacity sized for peak demand. The organisation also requires its application to remain available if a database instance fails. As the AWS solutions architect, recommend a suitable	10	4	3



VIT

Vellore Institute of Technology
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SCHOOL OF COMPUTER SCIENCE ENGINEERING AND INFORMATION SYSTEMS
CONTINUOUS ASSESSMENT TEST - II
FALL SEMESTER 2026-2027

RE

SLOT: D2+TD2

Session: I I

	cloud-native relational database architecture that handles unpredictable demand, improves read performance, and reduces unnecessary compute costs.			
4.	An engineering company hosts a Computer-Aided Design (CAD) application on multiple EC2 instances used by engineers across different offices. As usage grows, some servers become slow, configuration changes cause unexpected application failures, and monthly AWS costs increase significantly. Administrators struggle to identify who made the changes and which resources contribute to unnecessary spending. As the cloud architect, propose a centralized monitoring, auditing, and cost-management strategy. Explain the role of each service and justify how their combined use improves operational visibility, accountability, and cost control.	10	3	4
5.	An OTT streaming company operates separate Amazon VPCs for video processing, subscription management, and analytics. The video-processing VPC is peered with the subscription VPC, and the subscription VPC is peered with the analytics VPC. However, video-processing servers cannot communicate with analytics servers. The company also acquires another streaming provider whose VPC uses the same IP address range as its subscription VPC. As the AWS network architect, analyse why video-processing servers cannot reach the analytics VPC through the existing peering connections. Recommend changes to the VPC peering connections. Also, Explain how overlapping IP address ranges affect connectivity with the acquired company and propose a suitable resolution.	10	4	4
