Reg. No. : | | | | | | | | | | | | |

Question Paper Code:U8308

B.E./B.Tech. DEGREE EXAMINATION, APRIL / MAY 2025

Professional Elective

21ITV308- SECURITY AND PRIVACY IN CLOUD

(Regulations 2021)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 2 = 20 Marks)

1.	Differentiate private and public cloud.	CO1- U	
2.	Describe the primary concerns in Cloud Security.	CO1- U	
3.	List the key principles of security.	CO1- U	
4.	What are the advantages of cloud access control for end users?	CO1- U	
5.	Describe the significance of single sign-on in enhancing access control within a cloud environment.	CO1- U	
6.	Describe PAM and its relevance in cloud security?	CO1- U	
7.	Write the role of the data encryption at rest design pattern.	CO1- U	
8.	List out any three purpose of Gateway Authentication.	CO1- U	
9.	Discuss the role of Configuration Management.	CO1- U	
10.	How does Predictive Scaling work in cloud?	CO1- U	

PART – B (5 x 16= 80 Marks)

11.	(a)	Explain in detail about the fundamentals of cloud security.	CO1- U	(16)
		Or		
	(b)	Explain how digital signatures ensure both the authenticity and integrity of a message. If a digital signature scheme uses RSA algorithm, how is the private key used in this process?	CO1- U	(16)
12.	(a)	Develop a risk mitigation approach for securing the supply chain in cloud computing, incorporating third-party vendor assessments and continuous monitoring.	CO2- App	(16)
		Or		

	(b)	Construct an incident response strategy for a cloud-based infrastructure, including team member roles and responsibilities, the incident detection and escalation process, and the steps for restoring services and data integrity.	CO2- App	(16)
13.	(a)	Explain the importance of multi-factor authentication (MFA) in enhancing access control security in cloud infrastructure.	CO1- U	(16)
		Or		
	(b)	Outline the multi-factor authentication methods commonly used in cloud environments and how they mitigate the risk of unauthorized access.	CO1- U	(16)
14.	(a)	A company has a private cloud infrastructure but occasionally experiences spikes in demand during peak seasons (e.g., Black Friday sales). They want to implement cloud bursting to handle these peaks. How would you design an architecture that seamlessly bursts to a public cloud when needed? Consider aspects such as load balancing, security, and scaling.	CO2- App	(16)
		Or		
	(b)	Construct a strategy for providing precise location-based recommendations in the tourism app while addressing inaccuracies caused by poor GPS signals or device errors.	CO2- App	(16)
15.	(a)	Explain the steps involved in an effective incident response process for detecting and mitigating security incidents related to unauthorized access, malicious traffic, or abuse of system privileges	CO1- U	(16)
		Or		
	(b)	Demonstrate the necessity of a predefined incident response plan by illustrating the steps involved in incident detection, classification, containment, eradication, and recovery procedures.	CO1- U	(16)