Name:

Enrolment No:



UPES

End Semester Examination, Dec 2024

Course: Cloud Security and Management Semester: V

Program: B.Tech CS+CCVT (H/NH)

Course Code: CSVT3024

Time : 03 hrs.

Max. Marks: 100

Instructions:

a) Attempt all questions.

b) Question number 9 and 11 has internal choices. Attempt any one

SECTION A (5Qx4M=20Marks)

S. No.			Marks	СО
Q1	Enlist the responsibilities for Provider and Customer in Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS) when applying the Shared Responsibility Model.		4	CO1
Q2	What are the key differences and advantages of using security groups in the cloud compared to conventional zoning methods?		4	CO1
Q3	Match the following: Kerberos IPSec AH protocol Certificate Authority TACACS+ Provide but no c Key Dis AAA provide but no c Network Network Public I	s authentication, integrity confidentiality, stribution Center cotocol k Layer Security Key Infrastructure	4	CO2
Q 4	What is SSL (Secure Sockets Layer), and how does it ensure secure communication between a client and a server over the internet?		4	CO3
Q 5	Enlist and differentiate between different types of IAM.		4	CO3
	SECTI (4Qx10M=			
Q 6	Define the concept of trust in the context of cloud computing. Identify and describe in detail the different trust mechanisms used by cloud providers to secure data and build customer confidence		10	CO1
Q 7	Explain the following: a) Infrastructure Security at Network and Host Level b) Operating System Security		(5+5)	CO2
Q 8	Explain the key components and features of an AWS Virtual Private Cloud (VPC). How does a VPC enable secure communication between different resources within the cloud environment?		10	CO3

Q 9	ABC Corporation, a global enterprise handling sensitive customer and financial data, uses both on-premises and cloud-based infrastructure. To ensure data integrity and regulatory compliance, the company must secure data across its lifecycle.		
	a) What security measures should ABC Corporation implement to protect data during storage and transmission?b) In a multi-tenant cloud environment, how should ABC Corporation address risks related to data processing, data lineage, data provenance, and data remanence?	(5+5)	
	OR		CO3
	XYZ Tech Solutions is building a cloud-native financial services app that handles sensitive data, interacts with external APIs, and is deployed on multi-cloud infrastructure.		
	a) What measures should be taken to protect the web application from threats like XSS and SQL Injection?b) How can the company secure its APIs against unauthorized access and	(4+2+4)	
	data leakage? c) What strategies should be implemented to secure the cloud-native environment, including containers and microservices?		
Q10	Explain the following: a) Service Catalog b) Workflows in Cloud Computing c) AAA framework d) Kerberos	(5x4=20)	CO1
Q 11	 a) As an IT specialist responsible for configuring laptops for new hires, you are tasked with implementing a configuration management process to automate setups, manage updates, and ensure compliance. i) Explain how configuration management improves operational efficiency and security. How does it meet the growing needs of the company? ii) What risks could arise from not using configuration management for onboarding laptops, and how might these affect productivity, security, and compliance? 		CO4
	b) Describe the architecture of Chef, detailing its core components. Explain the role each component plays in the configuration management process.	(5+5+10)	
	OR		

a)	Define Industry 4.0 and explain its key characteristics. Additionally, examine the benefits and challenges organizations face in adopting Industry 4.0 technologies.		
b)	Explain the RAMI 4.0 (Reference Architectural Model for Industry 4.0) framework and its role in implementing Industry 4.0.		
•		(10+10)	