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VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN  
 [AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]  
 Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

**Question Paper Code: 60021**

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – NOV. / DEC. 2025

Fifth Semester

Computer Science and Technology  
 U23ITV41 – CLOUD COMPUTING  
 (Regulation 2023)

Time: Three Hours

Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 – Evaluating
	K2 – Understanding	K4 – Analyzing	K6 – Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	List the characteristics that make a cloud according to NIST.	2	K1	CO1
2.	List any four Design Challenges in Cloud Computing.	2	K1	CO1
3.	Differentiate Full Virtualization from Para-Virtualization.	2	K2	CO2
4.	What is the role of a Hypervisor in Virtualization?	2	K2	CO2
5.	State the purpose of Docker Repository in containerized applications.	2	K1	CO3
6.	How Dockers differ from Traditional Virtualization methods like Virtual Machines?	2	K2	CO3
7.	How is VM Migration attack harmful to the cloud?	2	K2	CO4
8.	List the core components of an Identity and Access Management (IAM) system and their role in ensuring secure access to cloud resources.	2	K2	CO4
9.	Distinguish cloud-based document collaboration (e.g., Google Docs) from traditional offline document sharing in terms of efficiency and control.	2	K2	CO5
10.	How does the scalability requirement differ between scientific applications and business applications in cloud computing?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.	Questions	Marks	KL	CO
11. a)	List the Cloud Service Models and explain them with diagrams.	13	K1	CO1
	(OR)			
b)	List the Cloud Deployment Models and explain them with diagrams.	13	K1	CO1
12. a)	How does virtualization impact system resource management and efficiency in multi-user environments?	13	K2	CO2
	(OR)			
b)	Explain the different types of virtualization, and provide examples of where each type is commonly used.	13	K2	CO2
13. a)	Explain Desktop Virtualization and its advantages in a corporate environment. How does it improve user productivity and resource management?	13	K3	CO3
	(OR)			
b)	Discuss the differences between Containers and Virtual Machines (VMs) and explain when each should be used in modern IT infrastructures.	13	K3	CO3
14. a)	What are the risks associated with guest hopping in virtualized environments, and how can these risks be mitigated through the use of hypervisor-based security mechanisms?	13	K4	CO4
	(OR)			
b)	Discuss the potential dangers of hyperjacking in cloud computing environments. How can hyperjacking attacks compromise both data and system integrity.	13	K4	CO4
15. a)	Analyze how different cloud service models (IaaS, PaaS, SaaS) contribute to solving challenges in the healthcare industry. Which model is most suitable for data privacy and why?	13	K4	CO5
	(OR)			
b)	Analyze the role of cloud computing in business applications. How does cloud-based data handling improve business decision-making compared to traditional systems?	13	K4	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.	Questions	Marks	KL	CO
16. a)	A cloud service provider wants to offer a multi-tenant infrastructure using network and storage virtualization to its clients. They also want to provide flexible desktop virtualization solutions and support container-based deployments via Docker, For the mentioned scenario:		K3	CO3
	i. Discuss how network virtualization can be implemented to ensure security, isolation, and efficient resource allocation in this multi-tenant environment.	7		
	ii. Evaluate the role of Docker images and repositories in managing container deployments in such a cloud Platform.	8		
	(OR)			
b)	A cloud service provider plans to build a highly scalable and flexible infrastructure using virtual clusters and resource management techniques. They want to automate workload balancing and resource allocation to handle variable customer demand efficiently.		K2	CO2
	i. Explain how virtual clusters and resource management techniques can be implemented to achieve scalability and efficiency in a data center environment.	8		
	ii. Analyze the role of virtualization tools and mechanisms in automating data-center operations.	7		