Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 16 – 12- 2025 **Time:** 01:00pm – 04:00pm

School: SOE	**Program:** B. Tech	
Course Code: ECE3078	**Course Name:** IOT and Cloud Computing	
Semester: VII	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	CO1	CO2	CO3	CO4	CO5	CO6
Marks	17	07	19	21	12	24

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1.	State any two limitations of cloud computing.	**2 Marks**	**L1**	**CO1**
2.	In what ways does cloud computing vary from grid computing?	**2 Marks**	**L2**	**CO2**
3.	What are the three layers of the cloud computing stack?	**2 Marks**	**L1**	**CO3**
4.	Define Platform as a Service in the context of cloud computing.	**2 Marks**	**L1**	**CO3**
5.	Mention two key distinctions between private cloud and public cloud.	**2 Marks**	**L1**	**CO4**
6.	Describe Amazon EC2 and its basic features.	**2 Marks**	**L2**	**CO4**
7.	Explain how AWS supports start-ups in deploying scalable applications.	**2 Marks**	**L2**	**CO4**
8.	What are the advantages of virtualization?	**2 Marks**	**L1**	**CO5**
9.	Explain the role of hypervisor in cloud computing.	**2 Marks**	**L1**	**CO6**
10.	Define load balancing in cloud computing.	**2 Marks**	**L2**	**CO6**

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	Evaluate the key strategic and operational factors that motivate enterprises to migrate to the cloud. Support your answer with examples showing how cloud adoption leads to improved agility, reduced IT overhead, and business continuity**.**	**15 Marks**	**L4**	**CO1**
	b.	Compare & contrast cloud computing vs. utility computing with suitable examples.	**5 Marks**	**L3**	**CO2**
		Or			
12.	**a.**	Cloud computing integrates several pre-existing computing paradigms such as grid, cluster, and distributed computing. Analyze how these paradigms contributed to the evolution of cloud computing. Highlight their architectural and operational differences that made cloud the preferred model today.	**15 Marks**	**L4**	**CO1**
	b.	Briefly describe the benefits of a distributed system architecture.	**5 Marks**	**L2**	**CO2**

13.	**a.**	A start-up company plans to launch an online education platform that includes video streaming, data storage, and an AI-based recommendation system. As a cloud consultant, propose how Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS) can be utilized to build and deploy this application. Explain the role of each service model with suitable examples.	**15 Marks**	**L4**	**CO3**
	b.	Describe how a community cloud benefits organizations with shared objectives or compliance needs.	**5 Marks**	**L2**	**CO4**
		Or			
14.	**a.**	Illustrate the cloud computing architecture and critically compare it with the traditional client/server architecture in terms of scalability, flexibility, and service delivery.	**15 Marks**	**L3**	**CO3**
	b.	Differentiate between public cloud and private cloud with suitable examples	**5 Marks**	**L2**	**CO4**

15.	**a.**	Compare and contrast different cloud service providers such as AWS, Microsoft Azure, and Google Cloud Platform in terms of their service models, pricing strategies, scalability options, and target users.	**10 Marks**	**L3**	**CO4**
	b.	Virtualization enhances system utilization but brings certain challenges. Discuss five major limitations of virtualization in enterprise environments — namely performance overhead, security risks, high setup cost, compatibility issues, and backup/recovery complexities.	**10 Marks**	**L3**	**CO5**
		Or			

16.	**a.**	A financial organization currently hosts all its applications on on-premise servers. Due to cost and maintenance issues, it plans to migrate to the cloud. Analyze which cloud migration strategy (public, private, hybrid, or community) would best suit the organization and outline the key steps involved in the migration process.	**10 Marks**	**L4**	**CO4**
	b.	Assume you are designing a private cloud infrastructure for a university. Describe how virtualization will be implemented in terms of hypervisors, networking, and storage. Explain how this setup can support multiple departments running different operating systems and applications simultaneously.	**10 Marks**	**L2**	**CO5**

17.	**a.**	A mid-sized IT company wants to improve flexibility and reduce hardware costs. As a system designer, propose how server, storage, and desktop virtualization can be integrated into their existing infrastructure. Justify your design with advantages and expected outcomes.	**10 Marks**	**L5**	**CO6**
	b.	Explain the concept of Storage Area Network (SAN) virtualization. Discuss its architecture, working principle, and advantages.	**10 Marks**	**L3**	**CO6**
Or					
18.	**a.**	Compare and contrast KVM, VMware, and VirtualBox in terms of architecture, deployment type, and resource management. Discuss key considerations for selecting a hypervisor and outline the major limitations encountered in virtualized system	**10 Marks**	**L5**	**CO6**
	b.	Differentiate between SAN virtualization and NAS virtualization in terms of architecture, access methods, and applications. Support your answer with a neat labeled diagram**.**	**10 Marks**	**L4**	**CO6**