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EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY
An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi

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24IS44

Fourth Semester B.E. Degree Examination, May 2026
FUNDAMENTALS OF CLOUD COMPUTING

TIME:3 hrs. Max.Marks:100

Note: 1. Answer **any FIVE** full questions, choosing **ONE** question from **each MODULE.**
2. M: Marks, L: Bloom's level,C: Course outcomes.
3. Assume missing data suitably.

		Module-1	M	L	C
Q.1	a	Describe various scalable computing trends and their paradigms.	6	L2	CO1
	b	How can virtual machines be implemented in a real-world computing environment? Illustrate three different VM architectures along with a diagram and analyze how they differ from traditional physical machines..	7	L3	CO1
	c	Explain the concept of virtual machine primitives and describe the different primitive operations with a suitable diagram.	7	L2	CO1
		OR			
Q.2	a	Define Cloud computing? What are the challenges in Cloud computing	6	L2	CO1
	b	Explain various system attacks and network threats in cyberspace and describe the four types of losses they cause to user	7	L2	CO1
	c	Discuss the five micro-architectures in modern CPU processors, that exploit ILP and TLP supported by multi core and multithreading technologies	7	L2	CO1
		Module–2			
Q.3	a	Discuss the five abstraction levels of virtualization from hardware to application layer with examples.	6	L2	CO2
	b	List and discuss the different types of Virtualization	8	L2	CO2
	c	Explain a architecture of livewire for Intrusion Detection using a dedicated VM.	6	L2	CO2
		OR			
Q.4	a	What is Hypervisor ? Explain Xen Architecture with a diagram	6	L2	CO2
	b	Discuss the Intel hardware support for virtualization of processor, memory, and I/O devices with a diagram	7	L2	CO2
	c	Explain different steps in Live migration process of a VM from one host to another .	7	L2	CO2
		Module–3			
Q.5	a	Explain the six design objectives of cloud computing .Also describe the different types of cloud services with suitable examples.	10	L2	CO3
	b	Discuss the concepts of warehouse-scale data centers and modular data centers. Also describe the key issues involved in managing data centers	10	L2	CO3
		OR			
Q.6	a	Discuss the Cloud ecosystem for building private clouds with a diagram	6	L2	CO3
	b	Discuss are the services and targeted applications of GAE,AWS and Azure	8	L2	CO3

	c	Differentiate Public cloud, Private cloud, Hybrid cloud With advantages and limitations	6	L2	CO3
		Module–4			
Q.7	a	Identify and briefly explain the major security concerns of cloud users	6	L2	CO4
	b	Discuss the Homomorphic encryption method to protect the sensitive data	7	L2	CO4
	c	Explain the concept of a trusted hypervisor and describe the various security challenges faced by mobile devices	7	L2	CO4
		OR			
Q.8	a	What are the security risks faced by cloud users as per CSA report-2016	7	L2	CO4
	b	Discuss the security risk posed by shared images and management OS	8	L2	CO4
	c	What are the top five best practices for ensuring cloud security? Explain each briefly.	5	L2	CO4
		Module–5			
Q.9	a	Discuss the Traditional Features Common to Grids and Clouds	6	L2	CO5
	b	Explain the Important Cloud Platform Capabilities	8	L2	CO5
	c	What are the emerging cloud environments.	6	L2	CO5
		OR			
Q.10	a	Differentiate between Grid computing and Cloud computing	6	L2	CO5
	b	Explain the Map Reduce framework with diagram and describe its data flow step by step.	8	L2	CO5
	c	Discuss the Amazon EC2 execution environment with a diagram	6	L2	CO5

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