CBCS SCHEME

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BAD515C

Fifth Semester B.E./B.Tech. Degree Examination, Dec.2025/Jan.2026
Cloud Computing

Time: 3 hrs. Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. M : Marks , L: Bloom's level , C: Course outcomes.

		Module – 1	M	L	C
Q.1	a.	Explain the concept of multicore CPU's with the memory hierarchy.	5	L2	CO1
	b.	Explain the concept of "System Availability". When a given system is said to be more reliable?	5	L2	CO1
	c.	Identify how the GPU computing contributed to the advancement of high performance computing and what are the key challenges and innovations necessary to achieve exascale computing and beyond.	10	L3	CO1
		OR			
Q.2	a.	Explain the concept of multithreading by considering any 2 micro architectures present in the modern CPU.	5	L2	CO1
	b.	What is Service-Oriented Architecture (SOA) and what are its core principles?	5	L2	CO1
	c.	Identify how the advancements in parallel processing and distributed computing contributed to the evolution of High-performance computing and high-throughput computing system? Give the examples of how these systems have adapted to meet modern computational needs?	10	L3	CO1
		Module – 2			
Q.3	a.	Apply the concept of virtualization to a data center consolidation scenario where resource utilization is low. Explain how different levels of virtualization could be implemented to increase efficiency.	10	L3	CO2
	b.	Explain hardware assisted virtualization concept by considering Intel X86 processor.	6	L2	CO2
	c.	What is Full Virtualization and Para Virtualization?	4	L2	CO2
		OR			
Q.4	a.	In a cloud service environment needing high availability, how live migration could be applied to ensure minimal service interruption. Include the role of memory, file systems and network migration in maintaining service continuity?	10	L3	CO2
	b.	Explain the concept of encalyptus for virtual networking of private cloud.	6	L2	CO2
	c.	What is a Hypervisor? Explain the Xen Hyper visor architecture with Domain O and Domain U?	4	L2	CO2

		Module – 3			
Q.5	a.	Explain the Architectural Design challenges in cloud architecture development.	10	L2	CO3
	b.	Explain Private, Public and Hybrid clouds with example.	6	L2	CO3
	c.	Explain the standard data center networking structure to access the internet.	4	L2	CO3
		OR			
Q.6	a.	What are the criteria/requirements to be considered while designing the data center inter connection networks? Explain the FAT-tree interconnection topology used for data-center construction.	10	L2	CO3
	b.	Describe with diagram how the cooling system works in a raised floor data center using hot-cold air circulation?	6	L2	CO3
	c.	Explain the different Resource Provisioning Methods.	4	L2	CO3
		Module – 4			
Q.7	a.	Explain the concept of XOAR with neat diagram and list the design goals of XOAR.	10	L2	CO4
	b.	Explain the concept of distributed defense against DDOS flooding attacks and man-in the middle attacks.	10	L2	CO4
		OR			
Q.8	a.	Explain the concept of virtual machine security services provided by the hypervisor and dedicated VM providing security with TCB (Trusted Computing Base).	10	L2	CO4
	b.	Explain the different security challenges for mobile devices in cloud environment. List out the unique security threats affecting mobile devices and the reasons for these security risks.	10	L2	CO4
		Module – 5			
Q.9	a.	Explain the Google File Systems (GFS) with its Architecture and Data mutation sequence in GFS.	10	L2	CO5
	b.	Explain the process of Amazon EC2 programming and Amazon Simple Storage Service (S3).	10	L2	CO5
		OR			
Q.10	a.	With formal definition of Map Reduce, Explain the Map Reduce frame work and Map Reduce Logical Data Flow.	10	L2	CO5
	b.	Explain Dryad frame work and its job structure, control and dataflow.	10	L2	CO5

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