

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***MCA DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025***Second Semester***Mater of Computer Applications****MC4203 / PMCT2423- Cloud Computing Technologies***Regulations – 2021/2024***Duration : 3 Hrs****Maximum : 100 Marks****PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)**

Q.No	Questions	BLT	CO	Marks
1.	Specify the two types of multicast communication in distributed systems and its significances.	L2	1	2
2.	In what way remote method invocation differ from RPC?	L2	1	2
3.	Identify the role of a virtualization in cloud computing.	L3	2	2
4.	Name any four open-source cloud platforms and its use cases	L2	2	2
5.	“Cloud computing support scalability” justify the statement with two examples.	L4	3	2
6.	Compare public, private, and hybrid clouds.	L3	3	2
7.	Differentiate between virtualization and emulation with suitable example.	L4	4	2
8.	Infer the concept of cloud federation and its importance.	L2	4	2
9.	Assess benefits of using microservices in application development.	L4	5	2
10.	Examine the relationship between microservices and APIs.	L5	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

Q.No	Questions	BLT	CO	Marks
11.	a Make use of Remote Method Invocation (RMI), implement a simple communication model between two systems with sample code.	L3	1	16
	Or			
	b Use the concept of physical clock synchronization to ensure consistent event timestamps across distributed nodes.	L3	1	16
12.	a i Break down the advantages of centralized resource allocation in multi-tenant environments.	L3	2	8
	i Explain the difference between centralized and decentralized resource management with examples.	L3	2	8
	Or			
	b Apply distributed computing principles in the design of a real-time application. Explain the architecture, communication mechanisms, resource management, and challenges with suitable solutions.	L3	2	16

13.	a	With a sample diagram, describe the NIST Cloud Computing Reference Architecture and its components.	L2	3	16
Or					
	b	Tabulate and compare IaaS, PaaS, and SaaS based on the types of services they offer. Highlight key differences in resource control, user responsibilities, and common use cases.	L2	3	16
14.	a	Assess the core functionalities of Google App Engine. Explain how it supports application development, deployment, scalability, and integration with Google Cloud services.	L4	4	16
Or					
	b	Compare various virtualization types based on their architecture. Highlight differences in implementation levels, resource management, and system performance.	L4	4	16
15.	a	Illustrate the Mini web service architecture and narrate the various components and its functionalities in detail.	L2	5	16
Or					
	b i	Explore the phases involved in the DevOps lifecycle. Illustrate each phase with tools and real-time examples to support your explanation.	L2	5	8
	i	Enumerate the main components that form the backbone of DevOps.	L2	5	8
	i	Discuss how these components ensure scalability, security, and faster releases.			