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

Question Paper Code: 13004

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Sixth Semester
Computer Science and Technology
U19CT613 – CLOUD COMPUTING
(Regulation 2019)

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.	What is meant by application development in the context of cloud computing?	2	K1	CO1
2.	Mention the two major components involved in the building of cloud computing environments.	2	K1	CO1
3.	What is cloud interoperability?	2	K1	CO2
4.	Summarize the drawbacks of using "Platform as a Service".	2	K2	CO2
5.	Define para-virtualization.	2	K1	CO3
6.	Mention the relationship between virtualization and cloud computing.	2	K2	CO3
7.	Write the computing services in the context of cloud platforms	2	K2	CO4
8.	Define storage systems in the context of data-intensive computing.	2	K1	CO4
9.	Write a note on federated cloud.	2	K2	CO5
10.	What is meant by green cloud computing architecture?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	State and explain the differences between parallel and distributed computing by highlighting their key characteristics.	13	K3	CO1
		(OR)			
	b)	Discuss two hardware architectures used for parallel processing, and explain how they facilitate parallel computation process.	13	K3	CO1
12.	a)	Explore the security, trust, and privacy considerations in cloud computing. Discuss common security threats and vulnerabilities and the best practices for securing data, applications, and infrastructure in the cloud environment.	13	K4	CO2
		(OR)			
	b)	Compare and contrast Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS), discussing their respective architectures, deployment models, and use cases.	13	K4	CO2
13.	a)	Compare and contrast execution virtualization and para-virtualization, discussing their advantages and limitations in the context of virtualized environments.	13	K4	CO3
		(OR)			
	b)	Explain the characteristics of virtualized environments and how they enable efficient resource allocation and management in modern computing systems.	13	K4	CO3
14.	a)	Discuss the characteristics of data-intensive computations, highlighting the challenges and opportunities they present in modern computing environments. Provide examples of real-world applications that rely on data-intensive computing.	13	K3	CO4
		(OR)			
	b)	Explain the MapReduce programming model in detail, discussing its key concepts, such as map and reduce functions, and how they enable distributed processing of large datasets. Provide a hypothetical example illustrating the MapReduce paradigm in action.	13	K3	CO4
15.	a)	Discuss the significance of energy efficiency in cloud computing, outlining strategies and technologies used to optimize energy consumption in cloud data centers.	13	K4	CO5
		(OR)			

		Marks	KL	CO
b)	Discuss the principles and practices of DevOps and how they contribute to improving collaboration between development and operations teams.	13	K4	CO5

PART – C

<div align="right">(1 x 15 = 15 Marks)</div>

Q.No.	Questions	Marks	KL	CO
16. a)	Analyze the role of cloud platforms, such as Amazon Web Services (AWS) and Google App Engine, in enabling data-intensive computing at scale. Discuss the compute, storage, and communication services offered by these platforms and how they support the deployment and execution of data-intensive applications.	15	K5	CO5

<div align="center">(OR)</div>

		Marks	KL	CO
b)	Critically evaluate the scalability and fault tolerance mechanisms used in cloud computing, such as horizontal and vertical scaling, load balancing, replication, and redundancy. Discuss their effectiveness in addressing scalability and fault tolerance requirements in cloud-based applications and services.	15	K5	CO2