SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY: PUTTUR-517 583
(AUTONOMOUS)
QUESTION BANK (DESCRIPTIVE)

Subject with Code: Introduction to Cloud Computing (23CS1201) **Course & Branch**: B.Tech – CSE(CCC)
Year & Sem: II Year & II Semester **Regulation: R23**

UNIT –I
INTRODUCTION

1	a	What is scalable computing in the context of distributed systems?	**[L1][CO1]**	**[2M]**
	b	Explain how clusters of cooperative computers contribute to distributed computing.	**[L2][CO1]**	**[2M]**
	c	Apply the concept of service-oriented architecture (SOA) in designing a cloud-based application.	**[L3][CO1]**	**[2M]**
	d	Differentiate between grid architecture and fundamental cloud architectures with an example.	**[L4][CO1]**	**[2M]**
	e	Assess two major challenges in implementing cloud computing in large-scale systems.	**[L5][CO1]**	**[2M]**
2		Explain in detail about evolution of Distributed Computing.	**[L2][CO1]**	**[10M]**
3	a	Differentiate between parallel and distributed computing Paradigms.	**[L4][CO1]**	**[5M]**
	b	Illustrate the evolution of scalable computing technology.	**[L3][CO1]**	**[5M]**
4		List and discuss the technology for network based system.	**[L1][CO1]**	**[10M]**
5	a	Apply your understanding of Cluster Computing to describe how its components function together in a clustered environment.	**[L3][CO1]**	**[5M]**
	b	Discuss in detail about clusters of cooperative computers with neat diagram	**[L2][CO1]**	**[5M]**
6	a	Define and explain the concept of Grid Computing with an example.	**[L1][CO1]**	**[5M]**
	b	Analyze how each layer interacts with others in Grid Computing architecture.	**[L4][CO1]**	**[5M]**
7	a	Discuss about Computational grid, data grid and network Grid.	**[L2][CO1]**	**[5M]**
	b	List and explain in detail about elements of Grid.	**[L1][CO1]**	**[5M]**
8	a	Create and explain a suitable SOA architecture for a distributed system.	**[L6][CO1]**	**[5M]**
	b	Explain in detail about Cloud Computing Stack.	**[L2][CO1]**	**[5M]**
9		State and Explain various characteristics of cloud computing.	**[L1][CO1]**	**[10M]**
10		Discriminate the Challenges in Cloud Computing.	**[L5][CO1]**	**[10M]**
11	a	What is Cloud Computing? Evaluate the advantages of Cloud Computing.	**[L5][CO1]**	**[5M]**
	b	Analyze the cloud architecture with neat sketch and explain how each layer contributes to overall service delivery.	**[L4][CO1]**	**[5M]**

UNIT –II

SERVICE DELIVERY AND DEPLOYMENT MODELS

1	a	What are the three main cloud service models in XaaS?	**[L1][CO2]**	**[2M]**
	b	Differentiate between Public Cloud and Private Cloud with one example each.	**[L2][CO2]**	**[2M]**
	c	Explain any two advantages of using cloud computing.	**[L2][CO2]**	**[2M]**
	d	Identify a real-time situation where SaaS is more suitable than IaaS.	**[L3][CO2]**	**[2M]**
	e	Suggest a suitable deployment model for a government organization and justify your choice briefly.	**[L3][CO2]**	**[2M]**
2	a	Define cloud computing. Explain in detail about SaaS.	**[L1][CO2]**	**[5M]**
	b	Analyze in detail about XaaS.	**[L4][CO2]**	**[5M]**
3		Define service model. Determine the service models in cloud computing.	**[L3][CO2]**	**[10M]**
4	a	Illustrate in detail Infrastructure as a Service.	**[L3][CO2]**	**[5M]**
	b	Evaluate the benefits and limitations of PaaS in comparison to other cloud service models like IaaS and SaaS.	**[L5][CO2]**	**[5M]**
5		Compare the IaaS, PaaS and SaaS.	**[L4][CO2]**	**[10M]**
6		Explain briefly about Deployment Models.	**[L2][CO2]**	**[10M]**
7	a	Create a detailed comparison between Public Cloud and Private Cloud.	**[L6][CO2]**	**[5M]**
	b	Create a hybrid cloud model and explain how it integrates both private and public clouds to provide flexible and scalable solutions.	**[L6][CO2]**	**[5M]**
8	a	Express Pros in Cloud Computing and explain them.	**[L2][CO2]**	**[5M]**
	b	Analyze Cons in Cloud Computing.	**[L4][CO2]**	**[5M]**
9	a	Analyze the components of a typical SLA and discuss how each ensures service accountability	**[L4][CO2]**	**[5M]**
	b	List and explain the different types of Service Level Agreements (SLAs).	**[L1][CO2]**	**[5M]**
10		Illustrate the Life Cycle of Service Level Agreement with neat diagram	**[L3][CO2]**	**[10M]**
11	a	Explain how SLA affects the quality of cloud services and its role in cloud computing.	**[L2][CO2]**	**[5M]**
	b	Identify the Approaches in SLA Management	**[L2][CO2]**	**[5M]**

UNIT –III
VIRTUALIZATION AS FOUNDATION OF CLOUD

1	a	What is virtualization in the context of cloud computing?	**[L1][CO3]**	**[2M]**
	b	Explain the purpose of virtual clusters in cloud environments.	**[L2][CO3]**	**[2M]**
	c	Differentiate between CPU virtualization and memory virtualization.	**[L2][CO3]**	**[2M]**
	d	How does virtualization help in automating data center operations?	**[L3][CO3]**	**[2M]**
	e	List the key phases involved in migrating an application to the cloud.	**[L3][CO3]**	**[2M]**
2	a	Define Virtualization and list its types. Write a short note on its advantages.	**[L1][CO3]**	**[5M]**
	b	Explain in detail different implementation level of virtualization	**[L2][CO3]**	**[5M]**
3		Illustrate the virtualization structures available with neat diagram	**[L3][CO3]**	**[10M]**
4	a	Evaluate the different types of virtualization and assess their strengths and weaknesses in various use cases.	**[L5][CO3]**	**[5M]**
	b	List and explain the benefits of Virtualization	**[L1][CO3]**	**[5M]**
5		Compare and explain full virtualization and para virtualization.	**[L4][CO3]**	**[10M]**
6	a	What is Hypervisor ? Illustrate about Hypervisor.	**[L3][CO3]**	**[5M]**
	b	Discriminate the Binary Translation with Full Virtualization	**[L5][CO3]**	**[5M]**
7		Construct a detailed explanation of CPU Virtualization.	**[L6][CO3]**	**[10M]**
8	a	Summarize the Memory Virtualization concept.	**[L2][CO3]**	**[5M]**
	b	Illustrate I/O Virtualization with an example.	**[L3][CO3]**	**[5M]**
9	a	Discuss about Virtual Clusters with its advantages.	**[L2][CO3]**	**[5M]**
	b	Explain the resource management in virtual clusters	**[L2][CO3]**	**[5M]**
10		Analyze the virtualization for data center automation.	**[L4][CO3]**	**[10M]**
11	a	What do you understand by Migrating Applications to Cloud.	**[L1][CO3]**	**[5M]**
	b	Interpret Live VM Migration Steps and Performance Effects.	**[L3][CO3]**	**[5M]**

UNIT –IV
DATA IN THE CLOUD

1	a	What is multi-tenancy in cloud computing?	**[L1][CO4]**	**[2M]**
	b	Explain the difference between GFS and HDFS in cloud file systems.	**[L2][CO4]**	**[2M]**
	c	How can a multi-schema approach help in managing multiple applications on the cloud?	**[L3][CO4]**	**[2M]**
	d	Identify a suitable scenario where using BigTable would be more effective than a relational database.	**[L3][CO4]**	**[2M]**
	e	Compare Datastore and SimpleDB based on their structure and use cases.	**[L4][CO4]**	**[2M]**
2	a	What is multi-entity support in cloud-based database architecture.	**[L1][CO4]**	**[5M]**
	b	Describe the need for multi-schema support in cloud-based systems.	**[L2][CO4]**	**[5M]**
3	a	Highlight the features of multi-tenancy in SaaS.	**[L2][CO4]**	**[5M]**
	b	Illustrate how multi-tenancy is achieved using cloud data stores.	**[L2][CO4]**	**[5M]**
4	a	Identify the key characteristics of cloud-native databases.	**[L1][CO4]**	**[5M]**
	b	Discuss the limitations of traditional databases in cloud- native environments.	**[L2][CO4]**	**[5M]**
5	a	Illustrate the architecture of Google File Systems(GFS) with a neat diagram.	**[L3][CO4]**	**[5M]**
	b	Compare GFS and HDFS in terms of their file handling mechanisms.	**[L4][CO4]**	**[5M]**
6	a	Demonstrate the working mechanism of Hadoop Distributed File System.	**[L3][CO4]**	**[5M]**
	b	Analyze how metadata is managed differently in GFS and HDFS.	**[L4][CO4]**	**[5M]**
7	a	What role does BigTable play in large-scale data storage?	**[L2][CO4]**	**[5M]**
	b	Highlight the key differences between SimpleDB and Datastore.	**[L2][CO4]**	**[5M]**
8	a	List the limitations of relational databases in cloud environments.	**[L1][CO4]**	**[5M]**
	b	Explain how cloud-native databases overcome these limitations.	**[L2][CO4]**	**[5M]**
9	a	Describe the role of cloud file systems in managing large data sets.	**[L2][CO4]**	**[5M]**
	b	Analzye how GFS and HDFS ensure fault tolerance and high availability.	**[L4][CO4]**	**[5M]**
10	a	Evaluate how BigTable handles structured and semi-structured data.	**[L5][CO4]**	**[5M]**
	b	Propose optimizations for improving throughput in didtributed file systems.	**[L6][CO4]**	**[5M]**
11	a	Suggest a multi-schema layout for tenant-based cloud applications in smart cities.	**[L3][CO4]**	**[5M]**
	b	Justify the importance of distributed file systems in cloud computing.	**[L2][CO4]**	**[5M]**

UNIT –V

CLOUD INFRASTRUCTURE SECURITY

1	a	Define authentication and authorization in cloud security.	**[L1][CO5]**	**[2M]**
	b	Explain the difference between network-level and application-level security in the cloud.	**[L2][CO5]**	**[2M]**
	c	Describe the role of Identity and Access Management (IAM) in cloud environments.	**[L2][CO5]**	**[2M]**
	d	Illustrate how IAM practices differ across SaaS, PaaS, and IaaS cloud models.	**[L3][CO5]**	**[2M]**
	e	Apply the concept of data security to explain how a cloud provider protects customer data.	**[L3][CO5]**	**[2M]**
2	a	Explain about Authentication Methods	**[L2][CO5]**	**[5M]**
	b	Interpret the various Authorization Methods	**[L3][CO5]**	**[5M]**
3		Summarize the details on cloud infrastructure security	**[L2][CO5]**	**[10M]**
4		Discuss in detail about Network Level Security, Host Level Security and Application Level Security.	**[L2][CO5]**	**[10M]**
5		Compare the Network, Host and Application Level of security	**[L4][CO5]**	**[10M]**
6		Assess the common types of attacks happen in Network, Host and Application Levels	**[L5][CO5]**	**[10M]**
7	a	Analyze the aspects of data security.	**[L4][CO5]**	**[5M]**
	b	Explain about provider data and its security.	**[L2][CO5]**	**[5M]**
8	a	Design a model for the life cycle of identity management and explain how each phase.	**[L6][CO5]**	**[5M]**
	b	List and Explain the activities supported by IAM.	**[L1][CO5]**	**[5M]**
9		Describe in detail about the IAM architecture with neat diagram.	**[L2][CO5]**	**[10M]**
10	a	Identify and create an explanation of the key factors that influence the availability of services.	**[L6][CO5]**	**[5M]**
	b	Illustrate in detail about the availability management on different cloud services.	**[L3][CO5]**	**[5M]**
11		Define the Cloud and explain the key issues in the cloud.	**[L2][CO5]**	**[10M]**

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