SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR (AUTONOMOUS)

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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Cloud Services And Virtualization(20CS1021) Course & Branch: IV B.Tech - CSM

Year & Sem: Regulation: IV Year & I Semester (R20)

UNIT-1

INTRODUCTION AND CLOUD MODELS

1	a)	Explain in detail about Cloud Computing and its advantages.	[L2][CO1] [6M]
	b)	Discuss System models for Distributed and Cloud Computing.	[L2][CO1] [6M]
2		Illustrate in detail about the NIST Cloud Computing Reference Architecture.	[L2][CO1] [12M]
3	a)	What is Cloud Computing? Explain the characteristics of Cloud Models.	[L2][CO1] [6M]
	b)	Illustrate about Cloud Service Providers.	[L2][CO1] [6M]
4		List the five major performers in NIST Cloud Computing Reference Architecture. Explain them clearly.	[L2][CO1] [12M]
5	a)	Define and explain Infrastructure as a Service Cloud model.	[L2][CO1] [6M]
	b)	Identify the role of Platform as a Service Cloud model.	[L3][CO1] [6M]
6	a)	Clearly explain briefly about Software as a Service.	[L2][CO1] [6M]
	b)	Describe about the PaaS advantages and dis-advantages.	[L2][CO1] [6M]
7		List the Cloud Models and explain any two of them clearly.	[L1][CO1] [12M]
8		Explain clearly about Public cloud and private cloud.	[L2][CO1] [12M]
9	a)	Differentiate between public cloud and private cloud.	[L4][CO1] [6M]
	b)	Identify the applications of Community Cloud and explain.	[L3][CO1] [6M]
10	a)	State and explain Community Cloud.	[L2][CO1] [6M]
	b)	Clearly explain about Hybrid Cloud.	[L2][CO1] [6M]

UNIT_II

BASICS OF VIRTUALIZATION

1	a)	What are the different types of virtualization? Explain.	[L2][CO2] [6M]
	b)	Explain the benefits of virtualization in modern computing environments.	[L2][CO2] [6M]
2		Illustrate the implementation levels of virtualization.	[L2][CO2] [12M]
3	a)	How does CPU virtualization work?	[L1][CO2] [6M]
	b)	Describe the process of memory virtualization.	[L2][CO2] [6M]
4		Explain the tools and mechanisms used for virtualization in cloud environments.	[L2][CO2] [12M]
5	a)	What are the challenges of virtualizing I/O devices? Explain in brief.	[L2][CO2] [6M]
	b)	How is storage virtualization implemented? Explain it.	[L2][CO2] [6M]
6	a)	Describe the Virtual clusters and resource management	[L2][CO2] [6M]
	b)	Briefly explain the different types of virtualization.	[L2][CO2] [6M]
7		Explain virtual clusters and resource management in virtualized environments.	[L2][CO2] [12M]
8		Describe how virtualization can be applied for data-center automation.	[L2][CO2] [12M]
9	a)	Differentiate Physical and Logical Partitioning.	[L4][CO2] [6M]
	b)	Briefly explain CPU Virtualization.	[L2][CO2] [6M]
10	a)	What are the various implementation levels of virtualization?	[L2][CO2] [6M]
	b)	Differentiate between full virtualization and para-virtualization.	[L4][CO2] [6M]

UNIT –III
VIRTUALIZATION TECHNIQUES

1	a)	Define storage virtualization and discuss its role in data management.	[L2][CO3] [6M]
	b)	Explain the different types of storage virtualization techniques.	[L2][CO3] [6M]
2		Explain system-level virtualization and its benefits in improving system performance.	[L2][CO3] [12M]
3	a)	What is operating system-level virtualization? Describe its advantages.	[L1][CO3] [6M]
	b)	Clearly explain OS-level virtualization.	[L2][CO3] [6M]
4		Describe the different types of virtual machines based on their taxonomy.	[L2][CO3] [12M]
5	a)	Discuss about control-plane virtualization.	[L1][CO3] [6M]
	b)	Define virtual machines and explain their basic functionality.	[L2][CO3] [6M]
6	a)	Distinguish between physical and logical partitioning in server environments.	[L5][CO3] [6M]
	b)	Explain the significance of logical partitioning in resource allocation.	[L2][CO3] [6M]
7		Explain server virtualization and its advantages in modern data centers.	[L2][CO3] [12M]
8		Discuss the various types of server virtualization.	[L2][CO3] [12M]
9	a)	What are the challenges of implementing storage virtualization.	[L1][CO3] [6M]
	b)	How does storage virtualization improve data redundancy and availability?	[L2][CO3] [6M]
10	a)	Explain the concept of control-plane virtualization.	[L2][CO3] [6M]
	b)	Identify how control-plane virtualization differs from data-plane virtualization.	[L3][CO3] [6M]

UNIT –IV

PARALLEL AND DISTRIBUTED PROGRAMMING PARADIGMS

1	a)	Explain the Map-Reduce model and its advantages.	[L2][CO4] [6M]
	b)	Discuss the process of mapping and reducing in the Map-Reduce paradigm.	[L2][CO4] [6M]
2		Illustrate about parallel efficiency of Map-Reduce.	[L3][CO4] [6M]
3	a)	How can relational operations be implemented using Map-Reduce?	[L2][CO4] [6M]
	b)	Give examples of common relational operations that benefit from the Map-Reduce approach.	[L2][CO4] [6M]
4		Explain the role of Map-Reduce in enterprise batch processing.	[L2][CO4] [12M]
5	a)	What is Google App Engine, and how does it support cloud applications?	[L2][CO4] [6M]
	b)	Briefly discuss about Google App Engine and Amazon AWS.	[L2][CO4] [6M]
6	a)	Infer how Azure can be used for cloud-based application development.	[L4][CO4] [6M]
	b)	Discuss the advantages of using Azure for enterprise solutions.	[L2][CO4] [6M]
7		Discuss the key features and services provided by Amazon AWS.	[L2][CO4] [12M]
8		Describe the role of open-source tools in cloud computing and their impact on development flexibility.	[L2][CO4] [12M]
9	a)	Discuss the importance of enterprise batch processing using Map-Reduce in handling large datasets.	[L2][CO4] [6M]
	b)	Identify some challenges faced in enterprise batch processing with Map-Reduce.	[L3][CO4] [6M]
10		Analyse cloud computing environments provided by Google App Engine, Amazon AWS, and Azure.	[L4][CO4] [12M]

UNIT-V
CLOUD INFRASTRUCTURE

1	a)	Explain the architectural design of compute clouds.	[L2][CO5] [6M]
	b)	Discuss the architectural design of storage clouds and their key components.	[L2][CO5] [6M]
2		Describe the layered cloud architecture and its role in cloud service delivery.	[L2][CO5] [12M]
3	a)	What are the major challenges in designing cloud architectures? Explain it.	[L1][CO5] [6M]
	b)	Identify and discuss strategies to overcome design challenges in cloud development.	[L3][CO5] [6M]
4		Analyze the concept of inter-cloud resource management and its importance.	[L4][CO5] [12M]
5	a)	Define resource provisioning in the context of cloud computing.	[L1][CO5] [6M]
	b)	Identify the key steps involved in platform deployment for cloud services.	[L3][CO5] [6M]
6	a)	Compare the architectural design of public and private compute clouds.	[L2][CO5] [6M]
	b)	Explain the role of virtualization in storage cloud architectures	[L2][CO5] [6M]
7		Analyze the challenges associated with inter-cloud resource management in multi-cloud environments.	[L4][CO5] [12M]
8		Discuss the global exchange of cloud resources and its impact on cloud scalability.	[L2][CO5] [12M]
9	a)	Discuss the role of automation in resource provisioning for cloud platforms	[L2][CO5] [6M]
	b)	How does effective platform deployment improve cloud service delivery?	[L2][CO5] [6M]
10	a)	Explain the process of global resource exchange in cloud environments.	[L2][CO5] [6M]
	b)	Identify the benefits and risks of global resource sharing among cloud providers.	[L3][CO5] [6M]

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