

SRM VALLIAMMAI ENGINEERING COLLEGE
(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK



VII SEMESTER

IT3761– Cloud Computing

Regulation – 2023

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Prepared by

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SUBJECT : IT3761 -Cloud Computing

SEM / YEAR: VII Sem/ IV Year

UNIT I VIRTUALIZATION AND VIRTUALIZATION INFRASTRUCTURE				
	Building cloud computing environments - Basics of Virtual Machines - Characteristics of virtualized environments – Taxonomy of virtualization techniques – Virtualization and cloud computing – Pros and cons of virtualization – Technology examples.			
	PART – A			
Q. No.	Questions	BT Level	Competence	
1	Define cloud computing environment.	BTL1	Remembering	
2	Define virtual machine.	BTL1	Remembering	
3	List the components of a virtual machine.	BTL1	Remembering	
4	State the purpose of virtualization.	BTL1	Remembering	
5	Name the types of virtualization.	BTL1	Remembering	
6	Identify the characteristics of a virtualized environment.	BTL1	Remembering	
7	Outline the process of building cloud computing environments.	BTL2	Understanding	
8	Classify virtualization techniques.	BTL2	Understanding	
9	Distinguish between full virtualization and para-virtualization.	BTL2	Understanding	
10	Compare virtualization and cloud computing.	BTL2	Understanding	
11	Relate virtual machines to cloud infrastructure.	BTL2	Understanding	
12	Contrast hardware virtualization and software virtualization.	BTL2	Understanding	
13	List the advantages of virtualization.	BTL1	Remembering	
14	State the disadvantages of virtualization.	BTL1	Remembering	
15	Name the technologies used for virtualization.	BTL1	Remembering	
16	Identify the role of hypervisors in virtualization.	BTL1	Remembering	
17	Recall the concept of server virtualization.	BTL1	Remembering	
18	Define full virtualization.	BTL1	Remembering	
19	Outline the characteristics of virtualized environments.	BTL2	Understanding	
20	Compare hosted and bare-metal hypervisors.	BTL2	Understanding	
21	Distinguish between server virtualization and storage virtualization.	BTL2	Understanding	
22	Relate virtualization to resource utilization.	BTL2	Understanding	
23	Classify the virtualization technologies based on implementation.	BTL2	Understanding	
24	Contrast the advantages and disadvantages of virtualization.	BTL2	Understanding	
	PART – B			
Q. No.	Questions	Marks	BT Level	Competence
1	Apply virtualization techniques to design a cloud computing environment.	16	BTL3	Applying
2	Demonstrate the creation of virtual machines using a virtualization platform.	16	BTL3	Applying
3	Use virtualization to improve resource utilization in an enterprise environment.	16	BTL3	Applying
4	Implement a server virtualization solution for an educational institution.	16		
5	Analyze the characteristics of virtualized environments and their impact on cloud computing.	16	BTL4	Analyzing
6	Compare and analyze different virtualization techniques.	16	BTL4	Analyzing
7	Examine the role of virtual machines in cloud computing environments.	16	BTL4	Analyzing
8	Differentiate between full virtualization and para-virtualization with suitable examples.	16	BTL4	Analyzing
9	Develop a virtualized infrastructure for a cloud service provider.	16	BTL3	Applying

10	Illustrate the deployment of virtual machines in a cloud environment.	16	BTL3	Applying
11	Apply hardware virtualization techniques to a business scenario.	16	BTL3	Applying
12	Demonstrate the use of hypervisors in managing virtual machines.	16	BTL3	Applying
13	Investigate the advantages and limitations of virtualization.	16	BTL4	Analyzing
14	Analyze the relationship between virtualization and cloud computing.	16	BTL4	Analyzing
15	Compare hosted hypervisors and bare-metal hypervisors.	16	BTL4	Analyzing
16	Examine the effectiveness of virtualization technologies in enterprise environments.	16	BTL4	Analyzing
17	Analyze the challenges involved in implementing virtualization infrastructure.	16	BTL4	Analyzing

	UNIT II CLOUD PLATFORM ARCHITECTURE			
	Cloud Computing: Definition, Characteristics - The cloud reference model - Cloud deployment models: public, private, hybrid, community – Economics of the cloud – Open challenges.			
	PART – A			
Q. No.	Questions	BT Level	Competence	
1	Define Cloud Computing.	BTL1	Remembering	
2	List the characteristics of cloud computing.	BTL1	Remembering	
3	State the objectives of cloud computing.	BTL1	Remembering	
4	Name the components of the cloud reference model.	BTL1	Remembering	
5	Define cloud deployment model.	BTL1	Remembering	
6	List the types of cloud deployment models.	BTL1	Remembering	
7	Outline the cloud reference model.	BTL2	Understanding	
8	Classify the cloud deployment models.	BTL2	Understanding	
9	Distinguish between public cloud and private cloud.	BTL2	Understanding	
10	Compare hybrid cloud and community cloud.	BTL2	Understanding	
11	Relate cloud computing to utility computing.	BTL2	Understanding	
12	Contrast public cloud and hybrid cloud.	BTL2	Understanding	
13	State the features of a public cloud.	BTL1	Remembering	
14	Name the benefits of a private cloud.	BTL1	Remembering	
15	Define hybrid cloud.	BTL1	Remembering	
16	Define community cloud.	BTL1	Remembering	
17	List the economic benefits of cloud computing.	BTL1	Remembering	
18	State the challenges in cloud computing.	BTL1	Remembering	
19	Outline the characteristics of cloud computing.	BTL2	Understanding	
20	Distinguish between capital expenditure and operational expenditure in cloud computing.	BTL2	Understanding	
21	Compare different cloud deployment models based on ownership.	BTL2	Understanding	
22	Relate cloud computing with cost optimization.	BTL2	Understanding	
23	Classify the challenges in cloud computing environments.	BTL2	Understanding	
24	Contrast traditional computing and cloud computing.	BTL2	Understanding	
	PART – B			
Q. No.	Questions	Marks	BT Level	Competence
1	Apply cloud deployment models to suitable business scenarios.	16	BTL3	Applying
2	Demonstrate the implementation of a public cloud infrastructure.	16	BTL3	Applying
3	Use the cloud reference model to design a cloud solution.	16	BTL3	Applying
4	Develop a hybrid cloud architecture for an enterprise.	16	BTL3	Applying
5	Illustrate the deployment of community cloud services.	16	BTL3	Applying
6	Analyze the characteristics of cloud computing.	16	BTL4	Analyzing
7	Compare and analyze public, private, hybrid, and community cloud models.	16	BTL4	Analyzing
8	Examine the cloud reference model and its components.	16	BTL4	Analyzing
9	Differentiate between traditional computing and cloud computing.	16	BTL4	Analyzing
10	Investigate the economic impact of cloud adoption.	16	BTL4	Analyzing

11	Apply cloud computing concepts to reduce IT infrastructure costs.	16	BTL3	Applying
12	Implement a cloud deployment strategy for a startup organization.	16	BTL3	Applying
13	Demonstrate the use of cloud services in an educational institution.	16	BTL3	Applying
14	Analyze the challenges involved in cloud platform architecture.	16	BTL4	Analyzing
15	Compare the deployment models based on scalability, cost, and security.	16	BTL4	Analyzing
16	Examine the benefits and limitations of cloud computing.	16	BTL4	Analyzing
17	Analyze the role of cloud deployment models in modern enterprises.	16	BTL4	Analyzing

	UNIT III PROGRAMMING MODEL			
	Aneka: Building Aneka clouds, Cloud programming and management, Multithreading with Aneka - Multithreading with Aneka - Programming applications with Aneka threads - Aneka task based programming - Aneka MapReduce programming.			
	PART – A			
Q. No.	Questions	BT Level	Competence	
1	Define Aneka.	BTL1	Remembering	
2	List the components of Aneka architecture.	BTL1	Remembering	
3	State the purpose of Aneka middleware.	BTL1	Remembering	
4	Define cloud programming.	BTL1	Remembering	
5	Name the services provided by Aneka.	BTL1	Remembering	
6	Define Aneka thread programming model.	BTL1	Remembering	
7	Outline the architecture of Aneka cloud.	BTL2	Understanding	
8	Classify the programming models supported by Aneka.	BTL2	Understanding	
9	Distinguish between thread programming and task programming.	BTL2	Understanding	
10	Compare task-based programming and MapReduce programming.	BTL2	Understanding	
11	Relate cloud programming with cloud management.	BTL2	Understanding	
12	Contrast Aneka threads and traditional threads.	BTL2	Understanding	
13	State the role of multithreading in Aneka.	BTL1	Remembering	
14	Define Aneka task programming.	BTL1	Remembering	
15	List the features of Aneka task model.	BTL1	Remembering	
16	Define MapReduce programming.	BTL1	Remembering	
17	Name the phases of MapReduce.	BTL1	Remembering	
18	State the benefits of Aneka programming models.	BTL1	Remembering	
19	Outline the process of building Aneka clouds.	BTL2	Understanding	
20	Distinguish between Map phase and Reduce phase.	BTL2	Understanding	
21	Compare distributed programming and cloud programming.	BTL2	Understanding	
22	Relate multithreading to cloud application execution.	BTL2	Understanding	
23	Classify the services provided by Aneka.	BTL2	Understanding	
24	Contrast thread-based applications and task-based applications.	BTL2	Understanding	
	PART – B			
1	Apply Aneka cloud architecture to build a cloud environment.	16	BTL3	Applying
2	Demonstrate the development of a multithreaded application using Aneka.	16	BTL3	Applying
3	Use Aneka thread programming for a parallel processing application.	16	BTL3	Applying
4	Implement a task-based application using Aneka.	16	BTL3	Applying
5	Develop a cloud application using Aneka programming models.	16	BTL3	Applying
6	Analyze the architecture of Aneka cloud platform.	16	BTL4	Analyzing
7	Compare and analyze the programming models supported by Aneka.	16	BTL4	Analyzing
8	Examine the role of multithreading in cloud applications.	16	BTL4	Analyzing
9	Differentiate thread-based and task-based programming approaches.	16	BTL4	Analyzing
10	Investigate the suitability of MapReduce for large-scale data processing.	16	BTL4	Analyzing
11	Illustrate the execution of distributed tasks using Aneka.	16	BTL3	Applying
12	Apply MapReduce programming to process large datasets.	16	BTL3	Applying
13	Demonstrate cloud resource management using Aneka.	16	BTL3	Applying
14	Analyze the services provided by Aneka for cloud management.	16	BTL4	Analyzing

15	Compare Aneka programming models based on performance and scalability.	16	BTL4	Analyzing
16	Examine the advantages and limitations of cloud programming with Aneka.	16	BTL4	Analyzing
17	Analyze the workflow involved in Aneka MapReduce programming.	16	BTL4	Analyzing

	UNIT IV CLOUD PLATFORMS			
	Amazon Web Services: AWS Platform – Services: Compute, Storage, Communication & Additional Services - Google App Engine: Application, Architecture and Cost Model -. Windows Azure: Origin of Windows Azure, Features - SQL Azure - Windows Azure platform appliance.			
	PART – A			
Q. No.	Questions	BT Level	Competence	
1	Define Amazon Web Services (AWS).	BTL1	Remembering	
2	List the service categories provided by AWS.	BTL1	Remembering	
3	State the purpose of AWS Compute services.	BTL1	Remembering	
4	Define AWS Storage services.	BTL1	Remembering	
5	Name the communication services provided by AWS.	BTL1	Remembering	
6	Define Google App Engine.	BTL1	Remembering	
7	Outline the AWS platform architecture.	BTL2	Understanding	
8	Classify AWS services based on functionality.	BTL2	Understanding	
9	Distinguish between compute and storage services in AWS.	BTL2	Understanding	
10	Compare Google App Engine and Windows Azure.	BTL2	Understanding	
11	Relate SQL Azure to cloud database services.	BTL2	Understanding	
12	Contrast AWS and Google App Engine platforms.	BTL2	Understanding	
13	List the components of Google App Engine architecture.	BTL1	Remembering	
14	State the features of Google App Engine.	BTL1	Remembering	
15	Define Windows Azure.	BTL1	Remembering	
16	List the features of Windows Azure.	BTL1	Remembering	
17	Define SQL Azure.	BTL1	Remembering	
18	State the purpose of Windows Azure Platform Appliance.	BTL1	Remembering	
19	Outline the architecture of Google App Engine.	BTL2	Understanding	
20	Distinguish between SQL Azure and traditional databases.	BTL2	Understanding	
21	Compare Windows Azure features with AWS services.	BTL2	Understanding	
22	Relate platform services to cloud application development.	BTL2	Understanding	
23	Classify the services offered by AWS.	BTL2	Understanding	
24	Contrast cloud platforms based on deployment and management.	BTL2	Understanding	
	PART – B			
1	Apply AWS services to develop a cloud-based application.	16	BTL3	Applying
2	Demonstrate the use of AWS compute and storage services.	16	BTL3	Applying
3	Use Google App Engine for deploying a web application.	16	BTL3	Applying
4	Implement a cloud database solution using SQL Azure.	16	BTL3	Applying
5	Develop an application using Windows Azure services.	16	BTL3	Applying
6	Analyze the architecture and services of AWS.	16	BTL4	Analyzing
7	Compare and analyze AWS, Google App Engine, and Windows Azure.	16	BTL4	Analyzing
8	Examine the role of cloud platforms in application deployment.	16	BTL4	Analyzing
9	Differentiate the features of Google App Engine and Windows Azure.	16	BTL4	Analyzing
10	Investigate the capabilities of SQL Azure in cloud environments.	16	BTL4	Analyzing
11	Illustrate the integration of AWS communication services in cloud applications.	16	BTL3	Applying
12	Apply cloud platform services to support enterprise applications.	16	BTL3	Applying
13	Demonstrate application deployment using Google App Engine.	16	BTL3	Applying
14	Analyze the service models offered by AWS.	16	BTL4	Analyzing
15	Compare cloud platforms based on scalability, reliability, and cost.	16	BTL4	Analyzing
16	Examine the advantages and limitations of Windows Azure.	16	BTL4	Analyzing
17	Analyze the effectiveness of cloud platforms in supporting modern applications.	16	BTL4	Analyzing

	UNIT V CLOUD APPLICATIONS			
	Scientific applications - Business and consumer application – Market-based management of clouds - Federated clouds / Inter Cloud – Third-party cloud services.			
	PART – A			
Q. No.	Questions	BT Level	Competence	
1	Define cloud application.	BTL1	Remembering	
2	List the types of scientific applications in cloud computing.	BTL1	Remembering	
3	State the benefits of cloud-based scientific applications.	BTL1	Remembering	
4	Define business application in the cloud.	BTL1	Remembering	
5	List consumer applications supported by cloud computing.	BTL1	Remembering	
6	Define market-based management of clouds.	BTL1	Remembering	
7	Outline the role of cloud computing in scientific applications.	BTL2	Understanding	
8	Classify cloud applications based on usage.	BTL2	Understanding	
9	Distinguish between business and consumer cloud applications.	BTL2	Understanding	
10	Compare federated cloud and Inter Cloud.	BTL2	Understanding	
11	Relate market-based management to cloud resource allocation.	BTL2	Understanding	
12	Contrast scientific applications and business applications in cloud environments.	BTL2	Understanding	
13	State the objectives of market-oriented cloud computing.	BTL1	Remembering	
14	Define federated cloud.	BTL1	Remembering	
15	Define Inter Cloud.	BTL1	Remembering	
16	List the features of third-party cloud services.	BTL1	Remembering	
17	State the advantages of federated clouds.	BTL1	Remembering	
18	Name the stakeholders involved in cloud applications.	BTL1	Remembering	
19	Outline the concept of federated clouds.	BTL2	Understanding	
20	Distinguish between cloud providers and third-party cloud services.	BTL2	Understanding	
21	Compare cloud application models used in different domains.	BTL2	Understanding	
22	Relate Inter Cloud to cloud interoperability.	BTL2	Understanding	
23	Classify third-party cloud services based on functionality.	BTL2	Understanding	
24	Contrast centralized cloud environments and federated cloud environments.	BTL2	Understanding	
	PART – B			
1	Apply cloud computing concepts to scientific applications.	16	BTL3	Applying
2	Demonstrate the use of cloud services in business applications.	16	BTL3	Applying
3	Use cloud platforms to develop consumer-oriented applications.	16	BTL3	Applying
4	Implement market-based resource allocation in a cloud environment.	16	BTL3	Applying
5	Develop a federated cloud solution for an enterprise scenario.	16	BTL3	Applying
6	Analyze the role of cloud computing in scientific applications.	16	BTL4	Analyzing
7	Compare and analyze business and consumer cloud applications.	16	BTL4	Analyzing
8	Examine market-based management techniques in cloud environments.	16	BTL4	Analyzing
9	Differentiate federated clouds and Inter Cloud architectures.	16	BTL4	Analyzing
10	Investigate the challenges involved in cloud application deployment.	16	BTL4	Analyzing
11	Illustrate the integration of third-party cloud services into cloud applications.	16	BTL3	Applying
12	Apply Inter Cloud concepts to support distributed cloud systems.	16	BTL3	Applying
13	Demonstrate cloud application deployment for a real-world use case.	16	BTL3	Applying
14	Analyze the benefits and limitations of third-party cloud services.	16	BTL4	Analyzing
15	Compare different cloud application domains and their requirements.	16	BTL4	Analyzing
16	Examine interoperability issues in federated cloud environments.	16	BTL4	Analyzing
17	Analyze the effectiveness of cloud applications in solving real-world problems.	16	BTL4	Analyzing