



VALLIAMMAI ENGINEERING COLLEGE
SRM Nagar, Kattankulathur – 603203.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Year & Semester : IV & VII
 Section : CSE -1& 2
 Subject Code : CS6703
 Subject Name : Grid and Cloud Computing
 Degree & Branch : B.E & CSE
 Staff in charge : Ms D.Kavitha & Ms.C.Pabitha

S.No	QUESTIONS	COMPETENCE	LEVEL
UNIT -1			
PART A			
1.	Illustrate the evolutionary trend towards parallel distributed and cloud computing.	Apply	BTL - 3
2.	List and explain in brief the three new computing paradigms.	Remember	BTL – 1
3.	Describe the applications of high performance and high throughput systems.	Remember	BTL – 1
4.	Define cyber physical systems.	Remember	BTL – 1
5.	Analyze the working of GPUs.	Analyze	BTL – 4
6.	Classify the primitive operations of virtual machines.	Apply	BTL - 3
7.	List out the cluster design.	Remember	BTL – 1
8.	Differentiate computational , data grid with P2P grids.	Analyze	BTL – 4
9.	Examine the reasons to adapt the cloud for upgraded internet applications and web services.	Apply	BTL - 3
10.	Discuss on SOA.	Understand	BTL – 2
11.	Differentiate grid computing versus cloud computing.	Understand	BTL – 2
12.	Formulate the features of MPI ,Mapreduce and Hadoop.	Create	BTL- 6
13.	Summarize the technologies available in grid standards.	Evaluate	BTL – 5
14.	Discuss on OGSA.	Understand	BTL -2
15.	Where OGSI and OGSA-DAI is utilized?	Remember	BTL – 1

16.	Analyze the features of grid FTP.	Analyze	BTL – 4
17.	Name the standards in WSRF.	Remember	BTL – 1
18.	Describe the standards related to web service.	Understand	BTL – 2
19.	Summarize the elements of grid.	Evaluate	BTL – 5
20.	Generalize the layers in grid architecture.	Create	BTL- 6
PART –B			
1	i) Identify and explain in detail about evolutionary trend of computer technology. ii) Explain the three paradigms in detail.	Remember	BTL – 1
2	i) Summarize in detail about the degrees of parallelism. ii) Discuss the application of high performance and high throughput system.	Understand	BTL – 2
3	i) Demonstrate in detail about internet of things and cyber physical systems. ii) Examine the memory ,storage and wide area networking technology in network based system.	Apply	BTL – 3
4	Define and examine in detail about the multi core CPUs and multithreading technologies.	Remember	BTL – 1
5	Analyze in detail about the GPU programming model.	Analyze	BTL – 4
6	i) Evaluate virtual machine and virtualization middleware in network based system? ii) Explain the convergence of technologies in detail?	Evaluate	BTL – 5
7	Generalize the ideas of i) cluster architecture ii) grid computing infrastructure in cooperative computer.	Create	BTL- 6
8	(i) Describe in detail the Peer to peer network families. (ii) Express in detail about cloud computing architecture over the internet.	Understand	BTL – 2
9	i) Explain the layered architecture of SOA for web services ii) Compare the features of grid versus cloud.	Analyze	BTL – 4
10	i) Demonstrate in detail about trends towards distributed systems. ii) Illustrate in detail about parallel and distributed programming models.	Remember	BTL – 1
11	Describe in detail about i) Grid architecture and ii)Grid standards	Remember	BTL – 1

12	Illustrate in detail about the various layers in grid architecture.	Apply	BTL – 3
13	Explain in detail about the elements of grid.	Analyze	BTL – 4
14	What do you interpret in the overview of grid architecture?	Understand	BTL – 2
UNIT 2			
PART A			
1	Define OGSA.	Remember	BTL – 1
2	Illustrate the relationship between resources and service.	Apply	BTL – 3
3	List the major goals of OGSA.	Remember	BTL – 1
4	Summarize on the goals of GGF.	Understand	BTL – 2
5	Classify the software technologies associated with OGSA.	Apply	BTL – 3
6	Formulate the OGSA grid service interfaces.	Create	BTL – 6
7	Summarize on grid service migration using GSH and GSR.	Evaluate	BTL – 5
8	Analyze the OGSA security model at various protection levels.	Analyze	BTL – 4
9	Discuss the strategies of data replication.	Understand	BTL – 2
10	List the model for organizing the data grid.	Remember	BTL – 1
11	Differentiate parallel data transfer versus striped data transfer.	Understand	BTL – 2
12	Give the basic services of OGSA.	Understand	BTL – 2
13	Define WSRF	Remember	BTL – 1
14	Point out the objectives of OGSA	Analyze	BTL – 4
15	Deduce the fundamental requirements for describing Web services based on the OGSI.	Evaluate	BTL – 5
16	Define grid service instance	Remember	BTL – 1
17	Name the concepts involved in the components of OGSI	Remember	BTL – 1
18	Illustrate the Two approaches to the implementation of argument demarshaling functions in a grid service hosting environment.	Apply	BTL – 3
19	Analyze the functional requirements of OGSA	Analyze	BTL – 4
20	Formulate the motivations that drive OGSA standards.	Create	BTL – 6
PART- B			
1	i) Define OGSA and describe the grid service architecture in detail. ii) Examine the grid service migration using GSH and GSR.	Remember	BTL – 1

2	i) Summarize the OGSA security model implemented at various protection models. ii) Discuss how a GSH resolves to different GSR for migrated service instance.	Understand	BTL – 2
3	i) Demonstrate the service models of data intensive grid. ii) Illustrate the architectural models for building a data grid.	Apply	BTL – 3
4	i) Analyze the set of services for the building blocks of OGSA based grid. ii) Explain the services provided by OGSA architecture.	Analyze	BTL – 4
5	Describe in detail about the practical view of OGSA and OGSi	Remember	BTL – 1
6	i) Examine the client side programming patterns for grid services. ii) Demonstrate in detail about the conceptual hosting environment for grid service.	Apply	BTL – 3
7	i) Discriminate how the Client Uses the Grid Service Handles and References. ii) Evaluate the relationship of grid service to Distributed Object Systems	Evaluate	BTL – 5
8	Develop the functional requirements on OGSA with a suitable application.	Create	BTL – 6
9	Describe in detail about the various OGSA services.	Remember	BTL – 1
10	Explain in detail about the motivation in developing the OGSA.	Analyze	BTL – 4
11	i) Tabulate the web service resource frame work and its related specifications. ii) Examine the reasons involved in adopting OGSA as a grid architecture by number of projects.	Remember	BTL – 1
12	i) Express in detail about the replication strategies in grid environment. ii) Distinguish the data transfer methods involved in grid services.	Understand	BTL – 2
13	i) Explain the OGSA grid service interfaces developed by the OGSA working group. ii) Analyze the difference between service oriented architecture and OGSA.	Analyze	BTL – 4
14	Discuss in detail about the grid service instances and the component model of OGSi	Understand	BTL – 2
UNIT 3			
PART A			
1	Define public private and hybrid clouds.	Remember	BTL – 1

2	Differentiate centralized and distributed computing.	Understand	BTL – 2
3	List the design objective of cloud.	Remember	BTL – 1
4	Define IaaS.	Remember	BTL – 1
5	Generalize on PaaS and SaaS.	Create	BTL – 6
6	Show the levels of virtualization implementation.	Apply	BTL – 3
7	Discuss the design requirements of VMM.	Understand	BTL – 2
8	Analyze the advantages and disadvantages of OS extensions.	Analyze	BTL -4
9	How does the virtualization Support the Linux platform?	Evaluate	BTL -5
10	Compare binary translation with full virtualization.	Analyze	BTL -4
11	Demonstrate the need of virtualization need of multi-core processor.	Apply	BTL – 3
12	Discuss the design issues of virtual clusters.	Understand	BTL – 2
13	List the properties of Virtual clusters when virtual machines are dynamically allocated.	Remember	BTL – 1
14	Define ISR.	Remember	BTL – 1
15	Describe the resource managers of eucalyptus for virtual network.	Understand	BTL – 2
16	How the data storage is classified in virtual environment?	Apply	BTL – 3
17	Formulate the side effects of server virtualization.	Create	BTL -6
18	Where OS level virtualization is needed?	Remember	BTL – 1
19	Discuss on the support of middleware for virtualization.	Evaluate	BTL – 5
20	Compare host based virtualization and para virtualization.	Analyze	BTL – 4
PART B			
1	i) Examine in detail about public private and hybrid cloud ii) Examine in detail about data center networking structure	Remember	BTL – 1
2	Analyze the uses of i)Infrastructure as a service ii)Platform as a service iii)Software as a service	Analyze	BTL – 4
3	i) Discuss the various levels of virtualization implementation	Understand	BTL – 2

	ii) Summarize the design requirements and providers of VMM.		
4	i) List the advantages and disadvantages of OS extension in virtualization. ii) Identify the support of virtualization Linux platform.	Remember	BTL – 1
5	i) Summarize the support of middleware and library for virtualization. ii) Describe the vCUDA architecture for virtualization of general purpose GPUs	Understand	BTL – 2
6	i) Compose in detail about the classes of VM architecture based on the position of virtualization layer Hypervisor and Xen architecture. ii) Design the implementation technology of hardware virtualization.	Create	BTL – 6
7	i) Illustrate in detail about the compiler support for para virtualization architecture. ii) Examine in detail about hardware support for virtualization and CPU virtualization.	Apply	BTL – 3
8	i) Point out the importance of memory virtualization. ii) Explain in detail about the need of IO virtualization.	Analyze	BTL – 4
9	Examine the need of virtualization in multi core processor.	Remember	BTL – 1
10	i) Differentiate physical clusters versus virtual clusters. ii) Discuss fast deployment, effective scheduling and high performance virtual storage in detail.	Understand	BTL – 2
11	Illustrate the migration steps and performance effects involved in live VM.	Apply	BTL – 3
12	i) Explain the migration of memory ,files and network resources in detail. ii) Analyze the dynamic deployment of virtual clusters in detail.	Analyze	BTL – 4
13	i) How server consolidation is supported in data center? ii) How will you explain the need of virtual storage management in data center?	Evaluate	BTL – 5
14	i) Define the need of need of cloud OS in virtualized data centres. ii) Examine the uses of trust management in virtualized data centres.	Remember	BTL – 1
UNIT-4			
PART A			
1	Analyze on grid software support and middleware packages.	Analyze	BTL-4

2	Define condor.	Remember	BTL-1
3	Examine the sequences of events of SGE workflow.	Apply	BTL -3
4	Summarize on Globus toolkit architecture.	Understand	BTL-2
5	List the functional modules in GT4 library.	Remember	BTL-1
6	Evaluate how data's are managed using GT4?	Evaluate	BTL -5
7	Define Globus container.	Remember	BTL-1
8	Analyze the need of MDS services in distributed system.	Analyze	BTL-4
9	Illustrate the building blocks in CGSP library	Apply	BTL -3
10	List the security measures in grid.	Remember	BTL-1
11	Evaluate why is a Block in HDFS So Large?	Evaluate	BTL-5
12	Differentiate name node with data node in hadoop file system.	Understand	BTL-2
13	Interpret how file permission is achieved in HDFS?	Understand	BTL-2
14	Generalize how a name node is not able to serve a request.	Create	BTL - 6
15	Analyze how a standby takes over when a active name node is failed.	Analyze	BTL-4
16	Define failover and fencing.	Remember	BTL – 1
17	Generalize as to how as FUSE interface is done.	Create	BTL-6
18	Discuss how a data is read from hadoop URL.	Understand	BTL-2
19	Name the details of file querying system.	Remember	BTL-1
20	Demonstrate how does the namenode choose which datanodes to store replicas on?	Apply	BTL - 3
PART B			
1	Describe the relative strength and limitation of open source grid middleware packages	Remember	BTL - 1
2	i) List the features in condor kernel and condor G for grid computing ii) Describe sun grid engine middleware package in detail.	Remember	BTL – 1
3	i) Summarize the grid standards and APIs.	Understand	BTL – 2

	ii) Discuss on grid software support and middleware package.		
4	i) Illustrate Globus tool kit architecture in detail. ii) Classify the functional modules in GT4 library.	Apply	BTL – 3
5	i) Explain the concepts involved in resource management using GRAM. ii) Classify the GT4 tools used by data management	Analyze	BTL -4
6	i) Evaluate the interaction in the functional module client globus job work flow. ii) Summarize the functional components in CGSP library.	Evaluate	BTL – 5
7	i) Generalize the functional components of china grid support platform library. ii) Design the functional building blocks in the CGSP library that represents the job executional flow.	Create	BTL – 6
8	i) Describe the usage of globus tool kit. ii) Define hadoop and examine the features of it.	Remember	BTL – 1
9	i) Discuss in detail about mapreduce functionalities. ii) Express in detail about the phases of map and reduce.	Understand	BTL – 2
10	i) Classify the various ways in input splitting of map reduce. ii) Show how will you prevent input splitting in map reduce	Apply	BTL – 3
11	i) Explain the design hadoop file system. ii) Formulate the concepts involved in HDFS.	Analyze	BTL – 4
12	i) Examine the basic file system operation in hadoop. ii) Tabulate the hadoop file system in detail.	Remember	BTL -1
13	Discuss in detail about the command line interface in java.	Understand	BTL – 2
14	Explain in detail about the anatomy of file read and file write.	Analyze	BTL – 4
UNIT 5			
PART A			
1	Give the challenges to establish trust among grid sites.	Understand	BTL-2
2	Define IDS.	Remember	BTL-1
3	Summarize on reputation trust model.	Understand	BTL – 2
4	List the steps to accomplish fuzzy interference.	Remember	BTL-1
5	Relate authentication and authorization methods in grid environment.	Apply	BTL-3
6	Evaluate the authorization model of grid security	Evaluate	BTL-5

7	Define trust delegation chain	Remember	BTL-1
8	Formulate the categories of authorization for access control.	Create	BTL – 6
9	Discuss on GSI.	Understand	BTL – 2
10	Differentiate transport level security and message level security	Analyze	BTL – 4
11	Compose the primary pieces of information of a certificate in GSI authentication.	Create	BTL-6
12	How will you measure the mutual authentication between two parties?	Evaluate	BTL – 5
13	Illustrate the sequence of trust delegation.	Apply	BTL – 3
14	Discuss the risk factors of network level of cloud infrastructure.	Understand	BTL-2
15	Tabulate the security levels at the network level.	Remember	BTL-1
16	Compare SaaS and PaaS host security.	Analyze	BTL-4
17	Show how will you categorize host security in IaaS?	Apply	BTL – 3
18	Identify the host security threats in public IaaS.	Remember	BTL-1
19	List out the categories in PaaS application security.	Remember	BTL-1
20	Point out privacy key issues in cloud.	Analyze	BTL-4
PART B			
1	Examine in detail about trust model for grid security enforcement	Apply	BTL-3
2	i) Define Authentication and Summarize on three authorization models of GSI. ii) Discuss on the trust delegation operations using proxy credentials in GSI	Remember	BTL-1
3	i) Define GSI and describe in detail about GSI functional layers. ii) Examine in detail about multiple handshaking in mutual authentication scheme.	Remember	BTL-1
4	i) Demonstrate the infrastructure security: Network level in cloud. ii) Classify the Key privacy issues in the cloud.	Apply	BTL-3
5	i) Analyze the infrastructure security of cloud at host level ii) Explain in detail about virtual server security of cloud	Analyze	BTL-4
6	Explain in detail about application level security in i) SaaS	Analyze	BTL-4

	ii)PaaS iii)IaaS		
7	i) Compose in detail about the aspects of data security. ii) Generalize on data security mitigation.	Create	BTL – 6
8	Evaluate the concepts involved in provider data and its security	Evaluate	BTL-5
9	i) Express in detail about the need of IAM ii) Give the challenges in IAM	Understand	BTL-2
10	i) Summarize on the basic concepts and definitions of IAM. ii) Evaluate and explain the practices of IAM Architecture.	Understand	BTL-2
11	Describe in detail about the IAM Standards and Protocols for Cloud Services	Remember	BTL -1
12	(i) Analyze in detail about the IAM Standards, Protocols, and Specifications for Consumers (ii) Compare the Enterprise and Consumer Authentication Standards and Protocols.	Analyze	BTL – 4
13	i) Tabulate in detail about the Comparison of SPI maturity models in the context of IAM ii) Tabulate the Comparison of maturity levels for IAM components in detail.	Remember	BTL -1
14	i) Discuss in detail about cloud identity management. ii) Summarize on the Cloud Service Provider IAM Practice.	Understand	BTL – 2

