SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

DEPARTMENT OF INFORMATION TECHNOLOGY

QUESTION BANK

VII SEMESTER

1908701 – CLOUD COMPUTING

Regulation – 2019

Academic Year 2022-2023 (Odd Semester)

Prepared by

Dr. D. Sridevi, Assistant Professor (S.G) / IT

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DEPARTMENT OF INFORMATION TECHNOLOGY

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SUBJECT : 1908701-Cloud Computing

YEAR/SEM: IV/VII

	UNIT I INTRODUCTION
	Introduction to Cloud Computing – Definition of Cloud – Evolution of Cloud Computing – Underlying Principles of Parallel and Distributed Computing – Cloud Characteristics – Elasticity in Cloud – On-demand Provisioning.

PART – A

Q. No.	Questions	BT Level	Competence
1	Define utility computing.	BTL1	Remembering
2	What is Grid Computing?	BTL2	Understanding
3	State the purpose of NCP.	BTL6	Creating
4	Mention the four key elements in parallel and distributed computing.	BTL1	Remembering
5	List the most prominent parallel programming approaches.	BTL1	Remembering
6	Define Cloud Computing.	BTL1	Remembering
7	Compare Parallel Computing and Centralized computing.	BTL1	Remembering
8	List out the cluster design issues.	BTL1	Remembering
9	Describe the applications of high performance and high throughput systems.	BTL1	Remembering
10	Difference between the high-performance computing and high throughput computing.	BTL3	Applying
11	Name the essential characteristics of cloud computing.	BTL1	Remembering
12	Give the advantages of cloud computing.	BTL2	Understanding
13	Highlight the importance of the term “cloud computing”.	BTL2	Understanding
14	Identify any two advantages of distributed computing.	BTL2	Understanding
15	Bring out the differences between private cloud and public cloud.	BTL2	Understanding
16	Illustrate the evolutionary trend towards distributed and cloud computing.	BTL3	Applying
17	What are the characteristics of cloud architecture that separates it from traditional one?	BTL3	Applying
18	Interpret the cloud resource pooling.	BTL3	Applying
19	Outline the elasticity in cloud.	BTL4	Analyzing
20	Mention the difference between elasticity and scalability in cloud computing.	BTL4	Analyzing
21	Specify few drawbacks of grid computing.	BTL4	Analyzing
22	How is On Demand provisioning of resources applied in cloud computing?	BTL5	Evaluating
23	Assess the properties of Cloud Computing.	BTL5	Evaluating
24	Formulate the technologies on which cloud computing relies.	BTL6	Creating

PART – B

Q. No.	Questions	Marks	BT Level	Competence
1	Describe about cloud components with neat diagram. Write in detail about hardware evolution in computer generations	6 7	BTL1	Remembering
2	Explain in detail about Internet Software Evolution.	13	BTL2	Understanding
3	Illustrate about the elements of parallel computing with neat diagram.	13	BTL3	Applying

4	i) Identify and explain in detail about evolutionary trend of computer technology. ii) Explain the three paradigms in detail.	**6** **7**	**BTL1**	**Remembering**
5	Define and examine in detail about the multi core CPUs and multithreading technologies.	**13**	**BTL1**	**Remembering**
6	Illustrate in detail about parallel and distributed programming models.	**13**	**BTL3**	**Applying**
7	i) Describe the infrastructure requirements for Cloud computing. ii)What are the issues in cluster design? How can they be resolved?	**6** **7**	**BTL1**	**Remembering**
8	i) Summarize in detail about the degrees of parallelism. ii) Discuss the application of high performance and high throughput system.	**6** **7**	**BTL2**	**Understanding**
9	i) Describe in detail the Peer-to-Peer network families. ii) Express in detail about cloud computing architecture over the internet?	**6** **7**	**BTL2**	**Understanding**
10	i) Illustrate the cloud architecture in detail. ii)Describe the architecture of a cluster with suitable illustrations.	**6** **7**	**BTL2**	**Understanding**
11	Explain about evolution of cloud computing in detail.	**13**	**BTL3**	**Applying**
12	Explain in detail underlying principles of Parallel and Distributed Computing.	**13**	**BTL3**	**Applying**
13	Explain in detail about the trends towards Cloud Computing.	**13**	**BTL3**	**Applying**
14	i)Outline the similarities and differences between distributed computing, grid computing and cloud computing. ii)Outline the architecture of cluster cooperative computers with a diagram.	**7** **6**	**BTL4**	**Analyzing**
15	Give the importance of cloud computing and elaborate the different types of services offered by it.	**13**	**BTL4**	**Analyzing**
16	Explain in detail about characteristics of Cloud.	**13**	**BTL5**	**Evaluating**
17	Generalize the ideas of software environments for distributed systems and clouds.	**13**	**BTL6**	**Creating**
	PART – C			
1	Explain in detail about hardware architecture of parallel processing with neat diagram.	**15**	**BTL5**	**Evaluating**
2	It is said, 'cloud computing can save money'. What is your view? Can you name some open-source cloud computing platform databases? Explain any one database in detail.	**15**	**BTL5**	**Evaluating**
3	Create and justify Cloud architecture application design with neat sketch.	**15**	**BTL6**	**Creating**
4	Briefly Explain each of the cloud computing services. Identify two cloud providers by company name in each service category.	**15**	**BTL6**	**Creating**
5	Explain the various Models for message-based communication and Technologies for distributed computing.	**15**	**BTL 4**	**Analyzing**

	UNIT II CLOUD ENABLING TECHNOLOGIES		
	Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish-Subscribe Model – Basics of Virtualization – Types of Virtualizations – Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices – Virtualization Support and Disaster Recovery.		
	PART – A		
Q. No.	**Questions**	**BT Level**	**Competence**
1	List the four major characteristics to identify a service.	**BTL1**	**Remembering**

2	Define SOA.	**BTL1**	**Remembering**
3	Write the two major roles in SOA.	**BTL2**	**Understanding**
4	Define Web services.	**BTL1**	**Remembering**
5	What is the purpose of WSDL and UDDI?	**BTL2**	**Understanding**
6	What are the fundamental components of SOAP specification?	**BTL1**	**Remembering**
7	List the essential principles of SOA architecture.	**BTL1**	**Remembering**
8	Define REST and its working.	**BTL1**	**Remembering**
9	State the most relevant technologies supporting service computing.	**BTL1**	**Remembering**
10	What do you mean by systems of systems? Give examples.	**BTL1**	**Remembering**
11	Identify the role of Web services in cloud technologies.	**BTL2**	**Understanding**
12	Discuss the purpose of Publish-Subscribe Model.	**BTL2**	**Understanding**
13	Specify the name of Web services tools.	**BTL2**	**Understanding**
14	Distinguish between physical and virtual clusters.	**BTL2**	**Understanding**
15	What are the benefits of virtualization in the context of cloud computing?	**BTL3**	**Applying**
16	Demonstrate the need of virtualization need of multi-core processor.	**BTL3**	**Applying**
17	How the data storage is classified in virtual environment?	**BTL3**	**Applying**
18	Infer about Virtual machine monitor.	**BTL4**	**Analyzing**
19	Compare binary translation with full virtualization.	**BTL4**	**Analyzing**
20	"Although Virtualization is widely Accepted today, it does have its limits". Comment on the statement.	**BTL4**	**Analyzing**
21	How does the virtualization Support the Linux platform?	**BTL5**	**Evaluating**
22	Discuss on the support of middleware for virtualization.	**BTL5**	**Evaluating**
23	Summarize the differences between Hardware Abstraction level and OS Level.	**BTL6**	**Creating**
24	Discuss classification or taxonomy of virtualization at different levels.	**BTL6**	**Creating**

PART – B

Q. No.	**Questions**	**Marks**	**BT Level**	**Competence**
1	Describe in detail about SOA and Web services.	**13**	**BTL1**	**Remembering**
2	Describe in detail about characteristics of virtualized environments.	**13**	**BTL1**	**Remembering**
3	Explain the working of public subscribe model.	**13**	**BTL2**	**Understanding**
4	Illustrate the Web services technologies stack with neat sketch.	**13**	**BTL1**	**Remembering**
5	Explain what you understand the technologies that make up the core of today's web services.	**13**	**BTL1**	**Remembering**
6	Describe in detail about the REST a software architecture style for distributed systems.	**13**	**BTL1**	**Remembering**
7	What is virtualization? Describe about para and full virtualization architectures. Compare and contrast them.	**13**	**BTL1**	**Remembering**
8	Summarize the virtualization for data center automation.	**13**	**BTL2**	**Understanding**
9	i) Summarize the support of middleware and library for virtualization. ii) Explain the layered architecture of SOA for web services.	**6** **7**	**BTL2**	**Understanding**
10	i) Explain about REST in detail. ii)Discuss fast deployment, effective scheduling and high performance virtual storage in detail.	**7** **6**	**BTL2**	**Understanding**
11	i) Illustrate in detail about the compiler support for para virtualization architecture. ii) Examine in detail about hardware support for virtualization and CPU virtualization.	**6** **7**	**BTL3**	**Applying**
12	Explain in detail about virtualization tools and mechanism.	**13**	**BTL3**	**Applying**
13	Illustrate the migration steps and performance effects involved in live VM.	**13**	**BTL3**	**Applying**
14	Analyze in detail about the implementation level of	**13**	**BTL4**	**Analyzing**

	virtualization.			
15	i) List the advantages and disadvantages of OS extension in virtualization. ii) Identify the support of virtualization Linux platform.	**6** **7**	**BTL4**	**Analyzing**
16	What is the difference between recovery time objective and recovery point objective? How do they depend on each other? Justify your answer with appropriate examples.	**13**	**BTL5**	**Evaluating**
17	i) Point out the importance of memory virtualization. ii) Explain virtualization of I/O devices with an example.	**6** **7**	**BTL6**	**Creating**
	PART – C			
1	Analyze how the virtualization technology supports the cloud computing.	**15**	**BTL 4**	**Analyzing**
2	Explain the technologies available for the design of application by following Service Oriented Architecture (SOA).	**15**	**BTL5**	**Evaluating**
3	Explain the virtualization structure for i)Hypervisor and Xen Architecture ii)Binary Translation with Full Virtualization iii) Para-Virtualization with Compiler Support.	 **5** **5** **5**	**BTL5**	**Evaluating**
4	Give the importance of Virtualization Support and Disaster Recovery.	**15**	**BTL6**	**Creating**
5	Explain Virtualization at various implementation levels.	**15**	**BTL5**	**Evaluating**

	UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE		
	Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public, Private and Hybrid Clouds – laaS – PaaS – SaaS – Architectural Design Challenges – Cloud Storage – Storage-as-a-Service – Advantages of Cloud Storage – Cloud Storage Providers – S3.		
	PART – A		
Q. No.	**Questions**	**BT Level**	**Competence**
1	Define public clouds.	**BTL1**	**Remembering**
2	Write in brief on community cloud.	**BTL1**	**Remembering**
3	Define IaaS.	**BTL1**	**Remembering**
4	State the differences between PaaS and SaaS.	**BTL1**	**Remembering**
5	Why do we need a hybrid cloud? Specify.	**BTL1**	**Remembering**
6	State the role of cloud auditor in cloud.	**BTL1**	**Remembering**
7	What are the different layers available in cloud architecture design?	**BTL2**	**Understanding**
8	What are the various components of NIST Cloud computing reference architecture?	**BTL2**	**Understanding**
9	Differentiate cloud consumer and cloud provider.	**BTL2**	**Understanding**
10	Identify the major players involved in cloud computing.	**BTL2**	**Understanding**
11	Demonstrate the need of private cloud.	**BTL3**	**Applying**
12	Show the interaction between the Actors in the cloud computing.	**BTL3**	**Applying**
13	Demonstrate the difference between software as a service and software plus service.	**BTL3**	**Applying**
14	Why do we need cloud storage? Specify.	**BTL4**	**Analyzing**
15	Analyze the storage as a service.	**BTL4**	**Analyzing**
16	Point out major activities of cloud provider.	**BTL4**	**Analyzing**
17	Compare service aggregation and service arbitrage.	**BTL5**	**Evaluating**
18	Summarize the benefits and drawbacks of using “Platform as a Service**.**	**BTL5**	**Evaluating**

19	Write down the services in EaaS.		**BTL6**	**Creating**
20	Identify the use of S3.		**BTL6**	**Creating**
21	Illustrate architecture of a cloud is developed using three layers.		**BTL3**	**Applying**
22	List the entities involved in the cloud platform.		**BTL1**	**Remembering**
23	Mention the major actors involved in NIST reference model.		**BTL1**	**Remembering**
24	What is service orchestration?		**BTL2**	**Understanding**
	PART – B			
1	List the cloud deployment models and give a detailed note about them.	**13**	**BTL1**	**Remembering**
2	Discuss in detail about the categories of cloud computing.	**13**	**BTL1**	**Remembering**
3	Describe service and deployment models of a cloud computing environment with illustrations.	**13**	**BTL1**	**Remembering**
4	Discuss about the Layered Cloud Architecture Design.	**13**	**BTL1**	**Remembering**
5	Summarize about the NIST Cloud Computing Reference Architecture.	**13**	**BTL2**	**Understanding**
6	Discuss the Infrastructure-as-a-Service, Platform as a service and Software as a service.	**13**	**BTL2**	**Understanding**
7	Discuss the features of software as a Service and explain in detail about SaaS with example.	**13**	**BTL2**	**Understanding**
8	Explain the software distribution model in which applications are hosted by a vendor or service provider and made available to customers over a network, typically the Internet.	**13**	**BTL3**	**Applying**
9	i. Illustrate the features of Platform as a Service. ii. Demonstrate in detail about PaaS with example.	**5** **8**	**BTL3**	**Applying**
10	i. Give the diagram Cloud Computing Reference Architecture. ii. Illustrate in detail about The Conceptual Reference Model of cloud.	**3** **10**	**BTL3**	**Applying**
11	Analyze the challenges in architectural design of cloud.	**13**	**BTL4**	**Analyzing**
12	Compare and Contrast: Public, Private and Hybrid clouds.	**13**	**BTL4**	**Analyzing**
13	Evaluate in detail about Cloud Storage and Storage-as-a-Service – with advantages of Cloud Storage.	**13**	**BTL5**	**Evaluating**
14	Explain with neat diagram about the Cloud Storage Providers and Amazon Simple Storage Service S3.	**13**	**BTL6**	**Creating**
15	Explain in detail the various challenges faced while designing Architecture.	**13**	**BTL1**	**Remembering**
16	Describe in detail the community cloud and give its benefits.	**13**	**BTL2**	**Understanding**
17	Distinguish three principal layers: Physical infrastructure, Software management infrastructure and User interface.	**13**	**BTL3**	**Applying**
	PART – C			
1	Explain about any one of the cloud storage providers.	**15**	**BTL5**	**Evaluating**
2	Evaluate and contrast the merits and demerit of Cloud deployment models: public, private, hybrid.	**15**	**BTL5**	**Evaluating**
3	Evaluate about the architectural design of compute and storage clouds.	**15**	**BTL5**	**Evaluating**
4	Under what circumstances should you prefer to use PaaS over IaaS? Formulate it with an example.	**15**	**BTL6**	**Creating**
5	Explain the challenges in cloud architectural design.	**15**	**BTL5**	**Evaluating**

	UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD
	Inter Cloud Resource Management – Resource Provisioning and Resource Provisioning Methods – Global Exchange of Cloud Resources – Security Overview – Cloud Security Challenges – Software-as-a-Service Security – Security Governance – Virtual Machine Security – IAM – Security Standards

	PART – A			
Q. No.	**Questions**		**BT Level**	**Competence**
1	What are the six layers of cloud services?		**BTL1**	**Remembering**
2	List the five application areas in SaaS applications.		**BTL1**	**Remembering**
3	State the different Resource Provisioning Methods.		**BTL1**	**Remembering**
4	List the cloud Differences in the perspectives of providers, vendors, and users.		**BTL1**	**Remembering**
5	What are the security challenges in cloud computing?		**BTL1**	**Remembering**
6	Define security governance.		**BTL1**	**Remembering**
7	Differentiate over provisioning and under provisioning of resources with an example.		**BTL2**	**Understanding**
8	Discuss the demand resource provisioning with example. (VMs)		**BTL2**	**Understanding**
9	Give the diagram for evolution of cloud services.		**BTL2**	**Understanding**
10	Identify the ways with examples in which the many cloud computing companies have developed large-scale data storage systems to keep huge amount of data collected every day.		**BTL2**	**Understanding**
11	Demonstrate any two storage services of cloud system.		**BTL3**	**Applying**
12	Illustrate password assurance testing.		**BTL3**	**Applying**
13	In which three basic cloud security enforcements are expected? Clarify.		**BTL3**	**Applying**
14	Analyze the different security threats in implementing SAAS.		**BTL4**	**Analyzing**
15	Examine whether the virtualization enhances cloud security.		**BTL4**	**Analyzing**
16	Differentiate the Physical and Cyber Security Protection at Cloud/Data Centers.		**BTL4**	**Analyzing**
17	Identify the phases of Sec SDLC.		**BTL5**	**Evaluating**
18	"Virtual machine is secured". Is it true? Justify your answer.		**BTL5**	**Evaluating**
19	Generalize about the IAM.		**BTL6**	**Creating**
20	Name the different Security Standards.		**BTL6**	**Creating**
21	What is mutual authentication?		**BTL2**	**Understanding**
22	Why cloud environment need SSL/TLS?		**BTL3**	**Applying**
23	List the types of SAML queries.		**BTL1**	**Remembering**
24	What are the types of statements are provided by SAML?		**BTL2**	**Understanding**
	PART – B			
1	Explain in detail about the Inter-cloud resource management.	**13**	**BTL1**	**Remembering**
2	Describe the Resource Provisioning and Platform Deployment.	**13**	**BTL1**	**Remembering**
3	Explain in detail about virtual machine creation and management.	**13**	**BTL1**	**Remembering**
4	Describe the Interactions among VM managers for cloud creation and management; the manager provides a public API for users to submit and control the VMs.	**13**	**BTL1**	**Remembering**
5	Summarize the global exchange of cloud resources.	**13**	**BTL2**	**Understanding**
6	Discuss in detail about Software-as-a-Service Security.	**13**	**BTL2**	**Understanding**
7	i) Express in detail about the need of IAM. ii) Give the challenges in IAM.	**6** **7**	**BTL2**	**Understanding**
8	Examine about Extended Cloud Computing Services with neat block diagram.	**13**	**BTL3**	**Applying**
9	Show what is Cloud Security Defense Strategies with neat diagram.	**13**	**BTL3**	**Applying**
10	Illustrate the following: i.Demand-Driven Resource Provisioning ii.Event-Driven Resource Provisioning iii.Popularity-Driven Resource Provisioning	**5** **5** **3**	**BTL3**	**Applying**

11	i.Explain in detail about security monitoring and incident ii.Define Application security and its use.	**8** **5**	**BTL4**	**Analyzing**
12	What is the purpose of IAM? Describe its functional architecture with an illustration.	**13**	**BTL4**	**Analyzing**
13	Explain the Secure Software Development Life Cycle with neat diagram.	**13**	**BTL5**	**Evaluating**
14	i) Compose in detail about the aspects of data security. ii) Generalize on data security mitigation.	**6** **7**	**BTL6**	**Creating**
15	Explain in detail about three cases of resource provisioning	**13**	**BTL2**	**Understanding**
16	Illustrate Inter cloud architecture with a neat sketch.	**13**	**BTL3**	**Applying**
17	Describe in detail three types of statements are provided by SAML	**13**	**BTL1**	**Remembering**
	PART – C			
1	Explain the security architecture design of a cloud environment and relate how it can be made possible to include such measures in a typical banking scenario.	**15**	**BTL6**	**Creating**
2	Evaluate the security governance and virtual machine security.	**15**	**BTL5**	**Evaluating**
3	For an SaaS application, who will be responsible to provide security for the infrastructure? Will it be cloud service provider or the cloud service consumer? Who will be responsible to ensure compliance with a privacy standard? Formulate your views about it .	**15**	**BTL5**	**Evaluating**
4	Describe the benefits of different cloud Security standards. (SAML OAuth, OpenID, SSL/TLS).	**15**	**BTL6**	**Creating**
5	Explain the cloud security challenges in detail.	**15**	**BTL5**	**Evaluating**

	UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS		
	Hadoop – MapReduce – Virtual Box — Google App Engine – Programming Environment for Google App Engine — Open Stack – Federation in the Cloud – Four Levels of Federation – Federated Services and Applications – Future of Federation.		
	PART – A		
Q. No.	**Questions**	**BT Level**	**Competence**
1	Define MapReduce function.	**BTL1**	**Remembering**
2	List the usage of virtual box.	**BTL1**	**Remembering**
3	Give some of the applications of GAE.	**BTL1**	**Remembering**
4	List the functional models of GAE.	**BTL1**	**Remembering**
5	Name the different modules in Hadoop framework.	**BTL1**	**Remembering**
6	Give the formal notation of MapReduce dataflow.	**BTL1**	**Remembering**
7	What are the benefits of cloud federation?	**BTL2**	**Understanding**
8	What is use of the Google SDC Secure Data Connection?	**BTL2**	**Understanding**
9	Discuss about open stack compute and open stack storage.	**BTL2**	**Understanding**
10	Analyze the open stack components.	**BTL2**	**Understanding**
11	Demonstrate how does the name node choose which data nodes to store replicas on?	**BTL3**	**Applying**
12	Show the architecture of MapReduce in Hadoop.	**BTL3**	**Applying**
13	Illustrate XMPP and its advantages.	**BTL3**	**Applying**
14	Differentiate name node with data node in Hadoop file system.	**BTL4**	**Analyzing**
15	Which is better VMWare or Virtual Box? Explain.	**BTL4**	**Analyzing**
16	Analyze the future of federations.	**BTL4**	**Analyzing**
17	"HDFS is fault tolerant. Is it true? Justify your answer	**BTL5**	**Evaluating**

18	Evaluate about the Federated applications.		**BTL5**	**Evaluating**
19	Draw the data mutation sequence in GFS.		**BTL6**	**Creating**
20	Give the diagram for Google cloud platform and its major building blocks.		**BTL6**	**Creating**
21	Illustrate the architecture of VirtualBox.		**BTL3**	**Applying**
22	What is the use of VirtualBox?		**BTL2**	**Understanding**
23	List the components maintained in a node of Google cloud platform		**BTL1**	**Remembering**
24	List the key services of OpenStack.		**BTL1**	**Remembering**
	PART – B			
1	Describe how the Open Solaris running on top of windows XP via virtual box with neat diagram.	**13**	**BTL1**	**Remembering**
2	i) Examine the basic file system operation in Hadoop. ii) Tabulate the Hadoop file system in detail.	**7** **6**	**BTL1**	**Remembering**
3	State and Explain the basic of Google App Engine infrastructure programming model.	**13**	**BTL1**	**Remembering**
4	Examine the architecture of Google File System (GFS).	**13**	**BTL1**	**Remembering**
5	Discuss MapReduce with suitable diagrams.	**13**	**BTL2**	**Understanding**
6	Summarize the Comparison of MapReduce++ Subcategories along with the Loosely Synchronous Category Used in MPI.	**13**	**BTL2**	**Understanding**
7	Discuss in detail about the four levels of federation in cloud.	**13**	**BTL2**	**Understanding**
8	i) Classify the various ways in input splitting of map reduce. ii) Show how will you prevent input splitting in map reduce.	**6** **7**	**BTL3**	**Applying**
9	How cloud federation addresses the limitations in cloud computing? Explain in detail.	**13**	**BTL3**	**Applying**
10	Illustrate how encrypted federation differs from trusted federation.	**13**	**BTL3**	**Applying**
11	Illustrate dataflow in HDFS during file read/write operation with suitable diagrams.	**13**	**BTL4**	**Analyzing**
12	Give a detailed note on Hadoop framework.	**13**	**BTL4**	**Analyzing**
13	Evaluate architecture of OpenStack in detail.	**13**	**BTL5**	**Evaluating**
14	Construct the design of OpenStack Nova system architecture and describe detail about it.	**13**	**BTL6**	**Creating**
15	Explain in detail Extensible Messaging and Presence Protocol.	**13**	**BTL2**	**Understanding**
16	Describe in detail functional modules of GAE.	**13**		
17	Illustrate the Architecture of Virtual box with neat sketch	**13**	**BTL3**	**Applying**
	PART – C			
1	Generalize the big table data model used in Mass Media using a simplified data model compared to traditional database systems	**15**	**BTL6**	**Creating**
2	What are the programming supports of Google App Engine? Illustrate in detail about the Google File System.	**15**	**BTL5**	**Evaluating**
3	Evaluate the HDFS concepts with suitable illustrations. Develop a word count application with Hadoop Map Reduce programming model.	**15**	**BTL5**	**Evaluating**
4	Construct OpenStack open-source cloud computing infrastructure and discuss in detail about it.	**15**	**BTL6**	**Creating**
5	Evaluate the architecture of Hadoop. Explain the file read/write operation in HDFS with suitable diagram.	**15**	**BTL5**	**Evaluating**