**QUESTION BANK**

Subject Code & Name : **CS8791** – CLOUD COMPUTING

Year / Sem : IV / VII

UNIT I- INTRODUCTION 9

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.

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| **UNIT I -INTRODUCTION** | | | |
| **Q.No** | **Question** | **BT Level** | **Competence** |
| PART – A | | | |
| 1. | Illustrate the virtual appliances in cloud computing. (NOV/DEC 2020) | BTL 2 | Understanding |
| 2. | List the main characteristics of cloud computing (NOV/DEC 2020) | BTL 1 | Remembering |
| 3. | What is Grid Computing with Example? (APR/MAY ‘19) | BTL 1 | Remembering |
| 4. | Outline any two advantages of distributed computing. (Nov/Dec 2018) | BTL 2 | Understanding |
| 5. | Tabulate the difference between high performance computing and high throughput computing. (April/May 2017) | BTL 2 | Understanding |
| 6. | Give the operations of a VM. (April/May 2017). | BTL 1 | Remembering |
| 7. | “Grid inherits features of P2P and Cluster Computing Systems”. Is the statement true? Validate your  answer. (Nov/Dec 2017) | BTL 2 | Understanding |
| 8. | Differentiate between grid and cloud computing. (Nov/Dec 2017) | BTL 2 | Understanding |
| 9. | Bring out the differences between private cloud and public cloud. (Nov/Dec 2016) | BTL 2 | Understanding |
| 10. | Highlight the importance of the term “cloud computing”;. (Nov/Dec 2016) | BTL 1 | Remembering |
| 11. | List out the three computing Paradigms. | BTL 2 | Understanding |
| 12. | What is meant by cloud computing? | BTL 1 | Remembering |
| 13. | What is meant virtual machine? | BTL 2 | Understanding |
| 14. | Can you define cluster? | BTL 2 | Understanding |
| 15. | What is meant by SSI? | BTL 2 | Understanding |
| 16. | Define Peer-to-Peer Network. | BTL 1 | Remembering |
| 17. | Define Overlay Networks. | BTL 1 | Remembering |
| 18. | List out three clouds services. | BTL2 | Understanding |
| 19. | Describe the classification of computing systems based on the number of instruction and data stream. | BTL2 | Understanding |
| 20. | What do you mean by architectural style? | BTL2 | Understanding |
| PART – B&C | | | |
| 1. | Illustrate the computing platforms and technologies for the development of cloud computing applications. (NOV/DEC 2020) (13) | BTL 3 | Applying |
| 2. | Outline the similarities and difference between distributed computing and cloud Computing | BTL 2 | Remembering |
| 3. | Brief the interaction between GPU and CPU model interaction in parallel execution of operations  (APR/MAY 2017) | BTL 4 | Analyzing |
| 4. | Write short notes on Cluster of Cooperative computers (NOV/DEC 2016) | BTL 1 | Remembering |
| 5. | Describe the architecture of clusters of cooperative systems with suitable examples.(NOV/DEC 2018) | BTL 2 | Understanding |
| 6. | Explain about evolution of cloud computing. | BTL 2 | Understanding |
| 7. | 6. Describe in detail about principles of distributed and parallel computing. | BTL 2 | Understanding |
| 8. | Explain briefly about Elasticity in cloud. | BTL 2 | Understanding |
| 9. | Write short notes on demand provisioning.  13) | BTL 2 | Understanding |
| 10 | Describe about eras of computing.  (13) | BTL 2 | Understanding |
| 11. | Explain about the elements of parallel computing. (7) | BTL 2 | Understanding |
| 12. | Discuss briefly about elements of distributed computing.  (13) | BTL 2 | Understanding |
| 13. | Write short notes on technologies of distributed computing. (13) | BTL 2 | Understanding |

UNIT II CLOUD ENABLING TECHNOLOGIES 10

Service Oriented Architecture – REST and Systems of Systems – Web Services – Publish- Subscribe Model –Basics of Virtualization – Types of Virtualization – Implementation Levels of Virtualization – Virtualization Structures – Tools and Mechanisms – Virtualization of CPU – Memory – I/O Devices –Virtualization Support and Disaster Recovery.

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| **UNIT II -CLOUD ENABLING TECHNOLOGIES** | | | | | |
| **Q.No** | **Question** | | **BT Level** | | **Competence** |
| PART – A | | | | | |
| 1. | Differentiate full virtualization &amp; Para Virtualization. (NOV/DEC 2020) | | BTL 2 | | Remembering |
| 2. | List the requirements of VMM. (Nov/Dec 2017, NOV/DEC 2020) | | BTL1 | | Remembering |
| 3. | Find the Web and Web architecture are SOA based. (April/May 2018) | | BTL2 | | Understanding |
| 4. | Define the term Web service. (Nov/Dec 2018) | | BTL 1 | | Remembering |
| 5. | Define Finite Group? | | BTL 2 | | Remembering |
| 6. | What is SOA? (Nov/Dec 2018) | | BTL1 | | Remembering |
| 7. | Give the role of a VM. (Nov/Dec 2016) | | BTL2 | | Understanding |
| 8. | Distinguish between physical and virtual clusters. (Nov/Dec 2017) | | BTL2 | | Understanding |
| 9. | “Although virtualization is widely accepted today, it does have its limits”. Comment on the statement.  (April/May 2018) | | BTL2 | | Understanding |
| 10. | Define the term virtual cluster. (Nov/Dec 2018) | | BTL 1 | | Remembering |
| 11. | Why IDL and Service Virtualization? | | BTL2 | | Understanding |
| 12. | What is the use of WSDL? | | BTL1 | | Remembering |
| 13. | Define Virtualization in cloud. | | BTL2 | | Understanding |
| 14. | List the types of Virtualization in cloud. | | BTL2 | | Understanding |
| 15. | How CPU is virtualized? | | BTL2 | | Understanding |
| 16. | Discuss the benefits of Clustering. | | BTL2 | | Understanding |
| 17. | List out the three resource managers. | | BTL2 | | Understanding |
| 18. | Why OS-Level Virtualization is required? | | BTL2 | | Understanding |
| 19. | Define REST ? | | BTL2 | | Understanding |
| 20. | What do you mean by WSDL? | | BTL2 | | Understanding |
| 21. | Describe about publish-subscribe model. | | BTL 1 | | Remembering |
| PART – B&C | | | | | |
| 1. | | Explain the different phenomenon that has gained an interest towards virtualization Technologies (NOV/DEC 2020) (13) | | BTL 4 | Analysing |
| 2. | | Explain about Virtualization for Linux and Windows and NT Platform. Design the process of Live Migration of VM from one host to another. (NOV/DEC 2020) | | BTL 4 | Analysing |
| 3. | | Discuss how virtualization is implemented in different layers. (April/May 2017) | | BTL 2 | Remembering |
| 4. | | What do you mean by data center automation using virtualization? (April/May 2017) | | BTL 4 | Analysing |
| 5. | | What is virtualization? Describe para and full virtualization architectures. Compare and contrast them.(Nov/Dec 2017) | | BTL 2 | Understanding |
| 6. | | “Virtualization is the wave of the future”; Justify, Explicate the process of CPU, memory And I/O device virtualization in data center. (April/May 2018) | | BTL2 | Understanding |
| 7. | | Explain virtualization of l/O devices with an example. (Nov/Dec 2018) | | BTL2 | Understanding |
| 8. | | What is a data center? Outline the issues to be addressed with respect to virtualization for data center automation. (Nov/Dec 2018) | | BTL2 | Understanding |
| 9. | | Explain in detail about SOA &amp; REST with neat diagrams? | | BTL 4 | Analysing |

UNIT III CLOUD ARCHITECTURE, SERVICES AND STORAGE 8

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.

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| **UNIT III -CLOUD ARCHITECTURE, SERVICES AND STORAGE** | | | | | |
| **Q.No** | **Question** | | **BT Level** | | **Competence** |
| PART – A | | | | | |
| 1. | Differentiate Public vs Private Cloud (NOV/DEC 2020) | | BTL 2 | | Understanding |
| 2. | Summarize the benefits and drawbacks of using “Platform as a Service”. (NOV/DEC 2020) | | BTL 1 | | Remembering |
| 3. | Analyse the Pros and Cons of cloud computing. (Nov/Dec 2019) | | BTL 4 | | analysing |
| 4. | Write a short note on community cloud. (Nov/Dec 2018) | | BTU 1 | | Remembering |
| 5. | Why do we need a hybrid cloud? (Nov/Dec 2016) | | BTL4 | | Analysing |
| 6. | Mention the characteristic features of the cloud. (April/May 2017, NOV/DEC 2020) | | BTL1 | | Remembering |
| 7. | Summarize the differences between PaaS and SaaS. (April/May 2017) | | BTL2 | | Understanding |
| 8. | What are the cloud deployment models? | | BTL2 | | Understanding |
| 9. | Define private cloud. | | BTL2 | | Understanding |
| 10. | Define public cloud. | | BTL 2 | | Understanding |
| 11. | Define Hybrid cloud. | | BTL2 | | Understanding |
| 12. | What are the cloud service models? | | BTL1 | | Remembering |
| 13. | What is meant by Saas? | | BTL2 | | Understanding |
| 14. | What is meant by Paas? | | BTL2 | | Understanding |
| 15. | What is meant by Iaas? | | BTL2 | | Understanding |
| 16. | Define Simple Storage Service (S3). | | BTL2 | | Understanding |
| 17. | What is called cloud storage? | | BTL2 | | Understanding |
| 18. | Define storage as a service. | | BTL2 | | Understanding |
| 19. | Give some examples of cloud storage providers. | | BTL2 | | Understanding |
| 20. | List out the advantages of cloud storage. | | BTL2 | | Understanding |
| PART – B&C | | | | | |
| 1. | | Explain in detail about cloud Layered architecture. (NOV/DEC 2020) | | BTL 4 | Analysing |
| 2. | | Explain Cloud deployment models with neat diagrams? (Nov/Dec 2019) | | BTL 4 | Analysing |
| 3. | | Describe Categories of cloud computing everything as a service: Infrastructure, platform, software.  (Nov/Dec 2019) | | BTl 2 | Understanding |
| 4. | | List the cloud deployment models-and give a detailed note about them. (Nov/Dec 2016) | | BTL 1 | Remembering |
| 5. | | Give the importance of cloud computing and elaborate the different: types of services offered by it. (Nov/Dec  2016) | | BTL 2 | Understanding |
| 6. | | Describe service and deployment models of a cloud computing environment with illustrations.  How do they fit in NST cloud architecture? (Nov/Dec 2017) | | BTL 2 | Understanding |
| 7. | | With architecture, elaborate the various deployment models and reference models of cloud computing.  (April/May 2018) | | BTL 2 | Understanding |
| 8. | | What are the pros and cons for public, private and hybrid cloud? (Nov/Dec 2018) | | BTL 4 | Analysing |
| 9. | | Describe about NIST Cloud Computing Refence Architecture | | BTL2 | Understanding |
| 10. | | 10. Write short notes on Simple storage Service(S3) | | BTL 2 | Understanding |

UNIT IV RESOURCE MANAGEMENT AND SECURITY IN CLOUD 10

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.

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| **UNIT IV -** **RESOURCE MANAGEMENT AND SECURITY IN CLOUD** | | | | | |
| **Q.No** | **Question** | | **BT Level** | | **Competence** |
| PART – A | | | | | |
| 1. | Point out Layers in security architecure design (NOV/DEC 2020) | | BTL1 | | Remembering |
| 2. | Identify uses of application security (NOV/DEC 2020) | | BTL1 | | Remembering |
| 3. | List out Resource Management Functions. | | BTL2 | | Understanding |
| 4. | List the three resource provisioning methods. | | BTL 1 | | Remembering |
| 5. | What is identity and access management in a cloud environment? U What is identity and access management in a cloud environment? (Nov/Dec 2018) | | BTL3 | | Applying |
| 6. | List the Cloud Security Challenges. | | BTL1 | | Remembering |
| 7. | What are the Gartner lists seven security issues which one should discuss with a cloud-computing vendor? | | BTL2 | | Understanding |
| 8. | Which One is the most important actions for a security team? | | BTL2 | | Understanding |
| 9. | Why is a security steering committee developed? | | BTL2 | | Understanding |
| 10. | Define Charter. | | BTL 1 | | Remembering |
| 11. | List out the factors involved in effective risk management. | | BTL3 | | Analysing |
| 12. | Why Security risk assessment is critical? | | BTL1 | | Remembering |
| 13. | What is called security portfolio management? | | BTL2 | | Understanding |
| 14. | What happens when there is a Lack of portfolio and project management discipline? | | BTL2 | | Understanding |
| 15. | List out the effective tools to manage risks related to people. | | BTL2 | | Understanding |
| 16. | What are all possible and probable risks that may be triggered by lack of an effective security awareness program? | | BTL2 | | Understanding |
| 17. | Define Secure Software Development Life Cycle (SecSDLC). | | BTL2 | | Understanding |
| 18. | List out the steps involved in SecSDLC. | | BTL2 | | Understanding |
| 19. | What is the result of lack of a third-party risk management? | | BTL2 | | Understanding |
| 20. | What is the purpose of business continuity (BC)/disaster recovery (DR) planning? | | BTL2 | | Understanding |
| 21. | What is Data Governance? | | BTL 1 | | Remembering |
| 22. | What is virtual machine security? | | BTL 1 | | Remembering |
| PART – B&C | | | | | |
| 1. | | Describe the Secure Software Development Life Cycle with neat diagram. (NOV/DEC 20) (13) | | BTL2 | Understanding |
| 2. | | Discuss in detail about IAM and its services. (Nov/Dec 2019) | | BTL 2 | Understanding |
| 3. | | Analyze the methods for providing data security and virtual machine security in cloud. (NOV/ DEC 2020) | | BTL 4 | Analysing |
| 4. | | Discuss in detail about inter cloud resource management. | | BTL 2 | Understanding |
| 5. | | What do you mean by resource provisioning and explain various resource provisioning methods. | | BTL2 | Understanding |

UNIT V CLOUD TECHNOLOGIES AND ADVANCEMENTS 8

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.

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| **UNIT III -CLOUD ARCHITECTURE, SERVICES AND STORAGE** | | | | | |
| **Q.No** | **Question** | | **BT Level** | | **Competence** |
| PART – A | | | | | |
| 1. | Outline services offered by aws (NOV/DEC 2020) | | BTL 1 | | Remembering |
| 2. | Identify development technologies supported by GAE. (NOV/DEC 2020) | | BTL1 | | Remembering |
| 3. | What are the advantages of using Hadoop? (Nov/Dec 2016) | | BTL2 | | Understanding |
| 4. | Write the significant use of GRAM. (April/May 2017) | | BTL 1 | | Remembering |
| 5. | Name the different modules in Hadoop framework. (April/May 2017) | | BTL 1 | | Remembering |
| 6. | “HDFS is fault tolerant. Is it true? Justify your answer. (Nov/Dec 2017) | | BTL1 | | Remembering |
| 7. | What is the purpose of heartbeat in Hadoop. (Nov/Dec 2017) (Nov/Dec 2019) | | BTL2 | | Understanding |
| 8. | How does divide-and-conquer strategy relates to MapReduce paradigm? (April/May 2018) | | BTL2 | | Understanding |
| 9. | Brief out the main components of Globus toolkit. (April/May 2018) Common runtime components? | | BTL2 | | Understanding |
| 10. | What is distributed file system? (Nov/Dec 2018) | | BTL 1 | | Remembering |
| 11. | How MapReduce framework executes user jobs? (Nov/Dec 2018) | | BTL3 | | Applying |
| 12. | Define Apache Hadoop . | | BTL1 | | Remembering |
| 13. | Define MapReduce. | | BTL2 | | Understanding |
| 14. | Illustrating relationship between data blocks and input splits. | | BTL2 | | Understanding |
| 15. | What are Advantages of HDFS Block? | | BTL2 | | Understanding |
| 16. | What is HDFS File system? | | BTL2 | | Understanding |
| 17. | Why using the Command Line Interface? | | BTL2 | | Understanding |
| 18. | Why HDFS Blocks are Large in Size? | | BTL2 | | Understanding |
| 19. | Write the use of Hadoop file system shell commands. | | BTL2 | | Understanding |
| 20. | What do you mean by Google App Engine? | | BTL2 | | Understanding |
| 21. | List out the four levels of Federation. | | BTL 1 | | Remembering |
| 22. | Define Federation. | | BTL 1 | | Remembering |
| 23. | What do you mean by virtual box? | | BTL 2 | | Understanding |
| 24. | Define Open stack. | | BTL 2 | | Understanding |
| PART – B&C | | | | | |
| 1. | | Explain detail Map Reduce. | | BTL 4 | Analysing |
| 2. | | What is Hadoop Framework and Explain in detail? | | BTL 4 | Analysing |
| 3. | | Write Short notes on HDFS. (Nov/Dec 2019) | | BTL 2 | Understanding |
| 4. | | Discuss MAPREDUCE with suitable diagrams. (April/May 2017) (Nov/Dec 2019) | | BTL2 | Understanding |
| 5. | | Use HDFS concepts with suitable illustrations. (April/May 2017) | | BTL 3 | Applying |
| 6. | | Illustrate dataflow in HDFS during file read/write operation with suitable diagrams.(Nov/Dec 2017) | | BTL3 | Applying |
| 7. | | With an illustration, emphasize the significance of MapReduce paradigm in Hadoop framework. List out the assumptions and goals set in HDFS architecture for processing the data based on divide-and-conquer  strategy. (April/May 2018) | | BTL3 | Applying |
| 8. | | Discuss in detail about GOOGLE APP Engine and its programming. (NOV/DEC 2020) | | BTL2 | Understanding |
| 9. | | Write short notes on virtual box. | | BTL2 | Understanding |
| 10. | | Explain briefly about Open Stack. | | BTL 4 | Analysing |
| 11. | | Describe about federation in the Cloud and four Levels of Federation. (NOV/DEC 2020) | | BTL 1 | Remembering |
| 12. | | Write short notes on   1. Federated Services and Applications   ii) Future of Federation. | | BTL 1 | Remembering |