MCA 505C
CLOUD COMPUTING

UNIT I:

Introduction: Distributed Computing and Enabling Technologies, Cloud Fundamentals: Cloud Definition, Evolution, Architecture, Applications, deployment models, and service models. Virtualization: Issues with virtualization, virtualization technologies and architectures, Internals of virtual machine monitors/hypervisors, virtualization of data centers, and Issues with Multi-tenancy.

UNIT II:

Implementation: Study of Cloud computing Systems like Amazon EC2 and S3, Google App Engine, and Microsoft Azure, Build Private/Hybrid Cloud using open source tools, Deployment of Web Services from Inside and Outside a Cloud Architecture. MapReduceand its extensions to Cloud Computing, HDFS, and GFS.Interoperability and Service Monitoring: Issues with interoperability, Vendor lock-in, Interoperability approaches. SLA Management, Metering Issues, and Report generation.

UNIT III:

Resource Management and Load Balancing: Distributed Management of Virtual Infrastructures, Server consolidation, Dynamic provisioning and resource management, Resource Optimization, Resource dynamic reconfiguration, SchedulingTechniques for Advance Reservation, Capacity Management to meetSLA Requirements, and Load Balancing, various load balancing techniques. Migration and Fault Tolerance: Broad Aspects of Migration into Cloud, Migration of virtual Machines and techniques. FaultTolerance Mechanisms.

UNIT IV:

Security: Vulnerability Issues and Security Threats, Application-level Security, Data level Security, and Virtual Machine level Security, Infrastructure Security, and Multi-tenancy Issues.IDS: host-based and network-based, Security-as-a-Service. Trust Management, Identity Management, and Access Controls TechniquesAdvances: Grid of Clouds, Green Cloud, Mobile Cloud Computing

TEXT BOOKS:

1. Mastering Cloud computing, RajkumarBuyya, Christian Vacchiola,SThamaraiSelvi, McGraw Hill
2. Cloud Computing Bible, Barrie Sosinsky, Wiley Publishers

REFERENCES:

1. Cloud Computing Principles and Paradigms, RajkumarBuyya,JamesBroberg, AndrzejGoscinski, Wiley Publishers
2. Cloud Computing: Web-based Applications that change the way you work and collaborate online, Michael Miller, Pearson Education
3. Cloud Computing and SOA Convergence in Your Enterprise: A Step-by-Step Guide, David S. Linthicum
4. Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance, Tim Mather, SubraKumaraswamy, ShahedLatif, O'Reilly
5. Cloud Computing: A Practical Approach, Toby Velte, Antohy T Velte, RobertElsenpeter, McGraw Hill