CS-703 – Cloud Computing

Unit-I

Introduction: Historical development ,Vision of Cloud Computing, Characteristics of cloud computing as per NIST , Cloud computing reference model ,Cloud computing environments, Cloud services requirements, Cloud and dynamic infrastructure, Cloud Adoption and rudiments.Overview of cloud applications: ECG Analysis in the cloud, Protein structure prediction, Gene Expression Data Analysis ,Satellite Image Processing ,CRM and ERP ,Social networking .

Unit-II

Cloud Computing Architecture: Cloud Reference Model, Types of Clouds, Cloud Interoperability & Standards, Scalability and Fault Tolerance,

Cloud Solutions: Cloud Ecosystem, Cloud Business Process Management, Cloud Service Management.

Cloud Offerings: Cloud Analytics, Testing Under Control, Virtual Desktop Infrastructure.

Unit –III

Cloud Management & Virtualization Technology: Resiliency, Provisioning, Asset management ,Conceps of Map reduce , Cloud Governance, High Availability and Disaster Recovery. Virtualization: Fundamental concepts of compute ,storage, networking, desktop and application virtualization .Virtualization benefits, server virtualization, Block and file level storage virtualization Hypervisor management software, Infrastructure Requirements , Virtual LAN(VLAN) and Virtual SAN(VSAN) and their benefits .

Unit-IV

Cloud Security: Cloud Information security fundamentals, Cloud security services, Design principles, Secure Cloud Software Requirements, Policy Implementation, Cloud Computing Security Challenges, Virtualization security Management, Cloud Computing Secutity Architecture .

Unit-V

Market Based Management of Clouds , Federated Clouds/Inter Cloud: Characterization & Definition ,Cloud Federation Stack , Third Party Cloud Services .

Case study : Google App Engine, Microsoft Azure , Hadoop , Amazon , Aneka

List of Experiments:

1. Installation and configuration of Hadoop/Euceliptus etc.
2. Service deployment & Usage over cloud.
3. Management of cloud resources.
4. Using existing cloud characteristics & Service models .
5. Cloud Security Management.
6. Performance evaluation of services over cloud .

Recommended Text:

1. Buyya, Selvi ,” Mastering Cloud Computing “,TMH Pub
2. Kumar Saurabh, “Cloud Computing” , Wiley Pub
3. Krutz , Vines, “Cloud Security “ , Wiley Pub
4. Velte, “Cloud Computing- A Practical Approach” ,TMH Pub
5. Sosinsky, “ Cloud Computing” , Wiley Pub