

# Cloud Computing

## UNIT – I

Introduction to Cloud Computing: Definition of Cloud – Evolution of Cloud Computing, Underlying Principles of Parallel and Distributed Computing (05). Cloud Characteristics – Elasticity in Cloud, On-demand Provisioning (05).

Lectures: 10

## UNIT – II

Cloud Enabling Technologies: Service Oriented Architecture – REST and Systems of Systems, Web Services – Publish, Subscribe Model (06). 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 (05).

Lectures: 11

## UNIT – III

Cloud Architecture, Services and Storage: Layered Cloud Architecture Design – NIST Cloud Computing Reference Architecture – Public, Private and Hybrid Clouds – IaaS – PaaS – SaaS (06). Architectural Design Challenges – Cloud Storage – Storage-as-a-Service – Advantages of Cloud Storage – Cloud Storage Providers – S3 (06).

Lectures: 12

## 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 (06).

Lectures: 12