SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

An Autonomous Institution

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING(IoT and Cybersecurity Including BCT)

COURSE NAME : Cloud Service Management /19OE219

IV YEAR / VII SEMESTER

Unit II-
Topic : Cloud Service deployment and migration

Cloud Service deployment and migration

Introduction to cloud services

• Definition of cloud services

• Types of cloud services (IaaS, PaaS, SaaS)

• Public vs private vs hybrid cloud

• Benefits of using cloud services

Cloud deployment considerations

- Security and compliance requirements
- Data location and jurisdiction
- Integration with on-prem sysems
- Vendor lock-in risks
- Cloud architecture patterns

Cloud migration process

- Assess existing infrastructure
- Identify target cloud platform
- Migrate data and databases
- Convert applications
- Test and validate migrated system
- Manage cutover

Migration strategies

• Rehosting (lift and shift)

• Replatforming (lift, tinker and shift)

• Repurchasing SaaS apps

• Refactoring / re-architecting

• Retaining (keep on-prem)

Managing multi-cloud environments

• Using managed services from cloud providers

• Cloud management platforms

• Cloud orchestration tools

• Monitoring and logging across clouds

• Automation and infrastructure as code

Optimizing cloud costs

• Utilize auto-scaling and load balancing

• Leverage spot/preemptible instances

• Right-size resources

• Use availability zones/regions efficiently

• Analyze usage and spending

Securing cloud environments

• Identity and access management

• Encrypt sensitive data

• Use private networking

• Automate security updates

• Monitor for threats and anomalies

Disaster recovery in the cloud

- Replicate data across regions

- Deploy hot/warm standby resources

- Automate failover

- Backup data regularly

- Design for high availability

Best practices for cloud development

- Design stateless components

- Utilize platform services

- Implement caching and CDNs

- Build for horizontal scaling

- Automate infrastructure management

Considerations for cloud migration

- Have a migration strategy
- Assess application compatibilit
- Retrain staff on new technologies
- Maintain legacy system access
- Plan for integration