1. Fundamentals of Cloud Computing

- Definition and characteristics of cloud computing
- History and evolution of cloud computing
- Importance of the **Pay-as-you-go** pricing model
- **Virtualization** and its role in cloud computing
- **Multi-tenancy** concept
- **Traditional vs. Cloud Computing**

2. Cloud Service and Deployment Models

- **Types of Cloud Services**: IaaS, PaaS, SaaS
- **Deployment Models**: Public, Private, Hybrid, and Community Cloud
- **Cloud Standards** and their relevance

3. Amazon Web Services (AWS) and Key Tools

- Introduction to AWS
- Core AWS services:
  - **EC2 (Elastic Compute Cloud)**
  - **S3 (Simple Storage Service)**
  - **Auto Scaling**
  - **Lambda Functions etc.**
- AWS use cases for **start-ups** and **businesses**

4. Cloud Security and Risk Management

- Common **cloud vulnerabilities** and **security issues**
- **Security solutions** and measures to handle threats
- **Risk mitigation methodologies**
- Security challenges in **web-based services**
- **Data breaches** and **cyberattack response**

5. Cloud Migration

- **Seven-Step Cloud Migration Model**
- **Challenges** and **risks** during migration
- **Vendor lock-in** and its impact
- Migration effects on **business performance and cost**

6. Cost Optimization in Cloud

- **Cloud cost-cutting techniques**
- Challenges in managing cloud costs
- Key **cost-saving features** from cloud providers

- Importance of cost efficiency in cloud operations

7. Application Architecture in Cloud

- **Microservice architecture**
- **Cloud computing architecture**: Front-end, Back-end, Middleware
- Role of cloud in **enhancing web-based business services**

Also refer all the Case studies and prepare from it also.