CLOUD COMPUTING

1) What is cloud computing?

   ANSWER:

   IT services are used via internet is known as cloud computing.

2) Describe cloud computing deployment models

   ANSWER:

   - Private cloud computing
   - Public cloud computing
   - Hybrid cloud computing

3) What are component of cloud computing

   ANSWER:

   1. Service Models (Cloud Services)

   These define what type of service the cloud offers:

   • IaaS (Infrastructure as a Service): Provides virtualized hardware resources (e.g., servers, storage, networking). Example: AWS EC2, Google Compute Engine.

   • PaaS (Platform as a Service): Provides a platform for developing, running, and managing applications. Example: Google App Engine, Heroku.

   • SaaS (Software as a Service): Delivers software applications over the internet. Example: Gmail, Microsoft 365, Dropbox.

   2. Deployment Models (How it's Delivered)

   • Public Cloud: Services provided over the internet to multiple customers (e.g., AWS, Azure).

   • Private Cloud: Used by a single organization, offering more control and security.

   • Hybrid Cloud: Combines both public and private cloud features.

   • Community Cloud: Shared between organizations with similar requirements.

   3. Infrastructure Components

   These are the core building blocks of any cloud system:

   • Compute Power: Virtual machines, containers, or serverless compute.

   • Storage: Object storage, block storage, file storage.

   • Networking: Virtual networks, firewalls, load balancers.

   • Virtualization: Hypervisors (e.g., KVM, VMware) that abstract hardware.

   • Management & Monitoring Tools: Dashboards, analytics, usage tracking.

   • Security: Firewalls, identity & access management (IAM), encryption.

4) Advantage and disadvantage of cloud computing.

   ANSWER:

   Advantages

• Cost Efficiency: Reduces capital expenditure on hardware and maintenance.
• Scalability: Easily scale resources up or down as needed.
• Accessibility: Access data and applications from anywhere with internet.
• Disaster Recovery: Provides backup and recovery solutions.
• Automatic Updates: Cloud providers handle software and hardware updates.
• Collaboration: Enhances team collaboration through shared resources.

Disadvantages

• Internet Dependency: Requires a stable internet connection.
• Security Concerns: Data stored in the cloud can be vulnerable to breaches.
• Limited Control: Less control over infrastructure and data management.
• Downtime: Possible outages or downtime from cloud providers.
• Ongoing Costs: Continuous payment for services may be expensive over time.
• Vendor Lock-In: Difficult to switch providers due to compatibility issues.