UNIT 5

INFORMATION STORAGE ON CLOUD

1. Concept of Cloud -
   The term 'cloud' has been used historically as a metaphor for the Internet.

2. Cloud Computing -
   It is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

3. Storage on Cloud -
   Cloud storage involves storing your data with a cloud service provider rather than on a local system. Data stored on the cloud is accessed via an Internet link.

4. Architectural Framework -
   - FRONT-END
     - USER ACCESS INTERFACE
   - INTERNET
   - BACK-END
     - CLOUD SERVICES (SaaS, PaaS, IaaS)
     - CLOUD HARDWARE (Server, storage, interconnectivity, devices)
     - CLOUD SOFTWARE (Cloud OS, middleware, security tool management tools)

Cloud Infrastructure layers -

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<th>SERVICES</th>
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<tr>
<td>SERVICE MANAGEMENT</td>
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<td>AGGREGATION LAYER (Cloud OS)</td>
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<td>VIRTUALIZATION LAYER</td>
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Cloud benefits -
1. Reduced IT cost
2. Flexibility and scalability
3. High energy consumption
4. Support business agility
5. High availability

Cloud computing evolution - Refer Unit 1 of cloud computing that is
Historical development (Distributed system, Virtualization, Web 2.0, Service oriented
Computing, Utility oriented computing).

Application & service on cloud -

Cloud services are -
(1) In Cloud execution
(2) Accessed via Internet
(3) Minimal/no IT skills to "Implement"
(4) Provisioning
(5) Pricing
(6) User Interface
(7) System Interface
(8) Shared resources

Cloud applications are -
(1) Enterprise solutions -
- Transactional data on high performance file sharing applications e.g. Amazon
- Cloud storage infrastructure e.g. EMC Atmos
(2) End-user solutions -
- Rich Internet applications and online service providers e.g. social media sites
- Online data backup. e.g. Netapp online backup.

Cloud service providers and models - Refer Unit 2 of cloud computing that is
Cloud reference model (IaaS, PaaS, SaaS) and types of clouds (public, private, hybrid, community

Essential characteristics of cloud computing - Refer Unit 1 of cloud computing that is
Characteristics of cloud computing as per NIST (On-demand self-service, Broad network access, Resource pooling, Rapid elasticity, Measured service).

Cloud security and protection - It refers to a broad set of policies, technologies,
and controls deployed to protect data, applications and associated infrastructure
of cloud computing.

Companion
Cloud Vocabulary:

Cloudtrust (Negative) - The failure of a cloud computing environment due to the inability to handle a spike in demand.

Cloudtrust (Positive) - The dynamic deployment of a software application that runs on internal organizational compute resources to a public cloud to address a spike in demand.

Cloudstreaming - The act of connecting multiple cloud computing environments.

Vertical Cloud - A cloud computing environment optimized for use in a particular vertical, i.e., industry or application use case.

Internal Cloud - A cloud computing environment within the boundaries of an organization and typically available for exclusive use by said organization.

Cloudware - A general term referring to a variety of software, typically at the infrastructure level, that enables building, deploying, running or managing applications in a cloud computing environment.

External Cloud - A cloud computing environment that is external to the boundaries of the organization to specific other organizations.

Cloud Vendor - A general term that refers to organizations (typically vendors) who are not cloud providers per se, but make available technology such as cloudware, that enables cloud computing.

Cloud-Enabled Architecture (CEA) - An architecture for IT infrastructure & software applications that is optimized for use in cloud computing environments.

Cloud Service Architecture (CSA) - An architecture in which applications and application components act as services on the cloud, which serve other applications within the same cloud environment.

Virtual Private Cloud (VPC) - Have security and ability to create a VPC across components, act as services on the cloud that are both within the cloud & internal to it.

Cloud Portability - The ability to move applications across cloud computing environments from different cloud providers, etc.

Cloud Planning - Running an application in a way that its components straddle multiple cloud environments.

Cloud Sourcing - It is a process by which cloud services and services are purchased.
Deployment and maintenance is outsourced to and provided by one or more cloud service providers.

Cloud Integration: It is the process of configuring multiple application programs to share data in the cloud.

In a network that incorporates cloud integration, diverse applications communicate either directly or through third-party software.