Roll No. 23 Name : [illegible] TYBCA - A

Page No. 1
Date

Cloud Computing Assign. :- 1

Q:-1 What is Cloud ? What is cloud Computing?

→ Cloud refers to the use of remote resources ~~Usually~~ Usually hosted over the internet, to store, manage and process data rather than using a local server or PC.

- What is cloud computing:

→ The term cloud refers to a network or the internet.

→ It uses remote server on the internet to store, manage & access data online rather than local drives.

- There are the following operations that we can do using cloud computing.

- Analysis of data
- Streaming Videos & Audios.
- Hosting blogs & webs.
- Delivery of ~~soft~~ software on demand.

Page No. 2
Date

Q:-2 Explain Cloud Computing Reference Model.

→ The cloud computing reference model provides a framework to understand the architecture, components in cloud computing.

(1) Software as a Service (SaaS)

→ Provides resources such as virtual machine storage & networking.

→ It is possible to define software as a service as the model of cloud computing in which the application is ~~level~~ delivered by a third party by directly accessing the application from the web rather than installation in local or organization local servers.

- Features:

(1) Hosted on the cloud.

(2) Accessed via the Internet

Page No. 3
Date

(2) Platform as a Service (PaaS)

→ Offers a platform allowing developers to build, deploy & manage applications without dealing with the underlying infrastructure.

→ Provides a greater level of virtualization to make a cloud easily programmable in other than infrastructure focused clouds.

- features:

(1) Development framework

(2) Scalability

(3) Infrastructure as a Service (IaaS)

→ Delivers Software application over the internet eliminating the need for local installation.

→ It is a platform where developers & IT organization utilize storage & computer resources.

Page No. 4
Date / /

- Features

(1) Virtualized Compute Resources:

(2) Scalability & Elasticity:

Q:-3 Explain Benefits of Cloud Computing

- Cost Efficiency

→ You only pay for the resources you use, avoiding upfront capital expenses for hardware or infrastructure.

- Scalability & Flexibility

→ Scale up or down resources like storage & computing power based on current needs.

- Enhanced Collaboration

- Teams can access files & applications from anywhere with an internet connection.

Page No. 5
Date

- Speed & Agility

→ Services & infrastructure can be set up in minutes.

- Enhanced Security

→ It provides invest in robust security protocols including encryption, firewalls & multi-factor authentication.

- Automatic Updates

→ cloud providers handle software & hardware updates ensuring you always use the latest tech.

- Improved Performance

→ Cloud services leverage content delivery Network for faster data delivery.

- Reduced Time to market

→ Launch products or services quickly without worrying about infrastructure setup.

Page No. 6
Date / /

Q:-4 Explain characteristic of Cloud Computing.

→ (1) On Demand Self-Service

→ Users can provision resources like Computing power, storage & applications as needed without human intervention from the service provider.

(2) Broad Network Access

→ Supports multiple platforms & devices with standard protocols & access methods.

(3) Resource Pooling

→ Resource like storage, ~~comp~~ Computing & network bandwidth are pooled to serve multiple customers using a multi-tenant model.

(4) Rapid Elasticity

→ Resources can be scaled up or down automatically & quickly in response to workload demands.

(4) Measured Services

→ Cloud systems automatically monitor, control & optimize resource usage.

(5) Multi-Tenancy

→ Multiple customers share the same infrastructure while keeping their data & operations isolated.

(6) High Availability & Reliability

→ Data is replicated across multiple servers or data centers to reduce the risk of loss or down time.

(7) Automation.

→ Automation supports scalability, updates & maintenance.

(8) Security.

→ Regular audits and compliance certifications ensure a secure environment.

Page No. 8
Date / /

Q:-5 Which challenges ahead of Cloud Computing?

→

- Security & Privacy concerns:

→ Sensitive data stored in the cloud can be vulnerable to unauthorized access.

- Downtime & Service Reliability

→ Organizations rely heavily on cloud vendors for uptime & reliability which can be posed risks during failures.

- Data management & Governance

→ Loss of direct control over data stored in the cloud can concern organizations.

- Cost Management

→ Organizations may incur additional charges for data egress premium features or support.

Page No. 9
Date

- Skill Gap

→ Keeping staff updated with rapidly evolving cloud technologies requires ongoing investment.

- Performance Issues

→ Performance relies heavily on internet bandwidth, making it vulnerable to network disruptions.

- Multi-~~[illegible]~~ cloud Management

→ Managing services across multiple cloud providers can complicate governance, security & cost tracking.

Q:-6 Explain the following cloud computing platforms & technologies:

(a.) Amazon Web Services (AWS)

→ It is one of the leading & most widely adopted cloud platforms globally.

Page No. 10
Date / /

→ It provides a broad set of cloud services that cater to diverse use cases including computing, storage, databases networking, ~~opti~~ artificial intelligence, machine learning and more.

- Features:

- Comprehensive Service Portfolio
- Global Reach
- Pay-as-you-Go Pricing
- Scalability & Elasticity

(b.) Google App Engine:

→ Google App Engine is a platform as a service offering from Google cloud that allows developers to build, deploy & scale web applications & services.

- Features:

- Fully Managed Platform
- Automatic scalability
- Support for multiple programming languages.

Page No. 11
Date

(c.) Microsoft Azure

→ It is a comprehensive cloud computing platform offered by microsoft.

→ It provides a wide range of cloud services. including compute, storage, databases, networking, analytics.

- features:

- Extensive Service Portfolio:
- Global infrastructure
- Hybrid Cloud ~~Computin~~ Capability
- Open Source & Flexibility

(d.) Hadoop

→ It is an open-source framework designed for distributed storage & processing of large datasets across a users of computers.

~~→ It is~~

Page No. 12
Date / /

→ It is part of the Apache Software foundation & is one of the most widely used technologies in big data processing.

→ Hadoops Ability to handle massive amounts of data in a scalable & cost effective manner has made it a cornerstone of cloud computing & data analytics platforms.

- features:

- Scalability
- Fault Tolerance
- Flexibility
- Open-source
- Cost-Effective.