What type of computing technology refers to services and applications that typically run on a distributed network through virtualized resources?

1. Distributed Computing
2. **Cloud Computing**
3. Soft Computing
4. Parallel Computing

Which one of the following options can be considered as the Cloud?

1. **Hadoop**
2. Intranet
3. Web Applications
4. All of the mentioned

Cloud computing is a kind of abstraction which is based on the notion of combining physical resources and represents them as _____resources to users.

1. Real
2. Cloud
3. **Virtual**
4. none of the mentioned

Which of the following has many features of that is now known as cloud computing?

1. Web Service
2. Softwares
3. All of the mentioned
4. **Internet**

Which one of the following cloud concepts is related to sharing and pooling the resources?

1. Polymorphism
2. **Virtualization**
3. Abstraction
4. None of the mentioned

Which one of the following can be considered as a utility is a dream that dates from the beginning of the computing industry itself?

1. **Computing**
2. Model
3. Software
4. All of the mentioned

Which of the following is an essential concept related to Cloud?

1. Reliability
2. **Abstraction**
3. Productivity
4. All of the mentioned

Which one of the following is Cloud Platform by Amazon?

1. Azure
2. **AWS**
3. Cloudera
4. All of the mentioned

Which of the following statement is not true?

1. Through cloud computing, one can begin with very small and become big in a rapid manner.
2. **All applications benefit from deployment in the Cloud.**
3. Cloud computing is revolutionary, even though the technology it is built on is evolutionary.
4. None of the mentioned
5.

## CHALLENGES AND RISKS

**Security, Privacy, and Trust**

**Data Lock-In and Standardization**

data locked-in by a certain provider.

Users may want to move data and applications out from a provider that does not meet their requirements.

answer to this concern is standardization - Cloud Computing Interoperability Forum (CCIF) was formed by organizations such as Intel, Sun, and Cisco

**Availability, Fault-Tolerance, and Disaster Recovery**

**Resource Management and Energy-Efficiency**

The multi-dimensional nature of virtual machines complicates the activity of finding a good mapping of VMs onto available physical hosts while maximizing user utility.

Data centers consumer large amounts of electricity.

## Role of Open Standards

- Open Standards" are standards made available to the general public and are developed and maintained via a collaborative and mutually agreed process.
- It facilitates interoperability and data exchange among different products or services and are intended for widespread adoption.
- The cloud computing technology is the result of the convergence of many different standards.
- Since, clients do not want to be locked into any single system, there is a strong industry push to create standards-based clouds.

- The cloud computing industry is working with the following architectural standards:
  Platform virtualization of resources

  Service-oriented architecture

  Web-application frameworks

  Deployment of open-source software

  Standardized Web services

  Autonomic systems

  Grid computing

## Open Cloud platform technologies

OpenStack

- An open source project by the company Rackspace.com(one of the largest Iaas cloud service provider).
- OpenStack Compute software will automatically create large groups of virtual private servers on industry-standard systems.
- OpenStack Storage is the software that will create redundant object-based storage using clusters of commodity servers and storage system.

EUCALYPTUS

- The company Eucalyptus Systems was formed in 2009 to support the commercialization of the Eucalyptus Cloud Computing Platform.

- A Linux-based software platform for IaaS systems based on computer clusters. Most of the major Linux vendors support this project. It works with a number of technologies for system virtualization.
- It has an interface that can connect to Amazon's compute and storage cloud systems (EC2 and S3).

## Cloud Computing Architecture

Cloud computing architecture refers to the components and sub components required for cloud computing. These components typically refer to:

1. Front end (fat client, thin client)
2. Back end platforms (servers,storage)
3. Cloud based delivery and a network (Internet, Intranet, Inter cloud)