

2 MARKS**1. Define distributed computing.**

Ans: - Distributed computing is a model in which components of a software system are shared among multiple computers to improve efficiency and performance.

It means that something is shared among multiple systems which may also be in different locations.

2. Define ON Demand Self Service.

Ans: - Cloud computing allows the users to use web services and resources on demand. One can logon to a website at any time and use them. Customers or organizations can request and manage their own computing resources.

3. What is interoperability?

Ans: - Application on one platform should be able to incorporate services from other platform. It is made possible via web services. But writing such web services is very complex.

4. Give two applications of cloud computing.

Ans: - Applications of cloud computing:-

- a. Data storage and back-up: -Dropbox.com & box.com

These are examples of two sites which provide storage space. All kinds of files can be stored online.

- b. Mail chimp: - This service is to manage businesses efficiently. It has the facility to keep subscribers records like contacts, details, one-to-one conversation with subscribers or clients. Automated emails based on client's preferences may be sent.

5. What are cloud service requirements?

Ans: - Cloud service requirements:-

- a. Elasticity
- b. Manageability
- c. Data Security
- d. Portability of Data & Applications
- e. Availability – with loss less DR(Disaster Recovery)

6. Give four examples of cloud computing.

Ans: - Examples of cloud computing:-

- a. Scalable Usage
- b. Chatbots
- c. Communication
- d. Productivity

7. Define Encryption.

Ans: - Encryption helps to protect data from being compromised. It protects data that is being transferred as well as data stored in the cloud. Although encryption helps to protect data from any unauthorized access, it does not prevent from data loss.

8. Two challenges of cloud computing.

Ans: - Challenges of cloud computing:-

a. Security and privacy: - It is a major hindrance with use of cloud computing technology. Since data and infrastructure is managed by third party, it is always a risk to keep sensitive information to such providers.

b. Lock-in:-It is very difficult for the customers to switch from one cloud service provider (CSP) to another. It results in dependency on a particular CSP for service. Applications should easily be migrated from one cloud provider to another.

9. **Define Infrastructure scalability.**

Ans: - Cloud services are made available on demand from a pool of resources i.e. they can be scaled up or down according to the requirement. They provide ability to be scaled seamlessly on demand.

UNIT -2 Cloud Computing Service Models and deployment Models

2 MARKS

1. Define Public Cloud?

Ans: - The Public Cloud allows systems and services to be easily accessible to the general public. The infrastructure costs are spread among a mix of users, giving each individual client an attractive low – cost, “Pay-as-you-go” model, public cloud may be less secure because of its openness, e.g., e-mail.

2. What is hybrid cloud?

Ans: - The hybrid cloud is mixture of public and private cloud. Non-critical activities are performed using public cloud while the critical activities are performed using private cloud.

3. What do you mean by service model?

Ans: - Cloud computing service models enables ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources that can be rapidly provisioned.

4. Define private cloud?

Ans: - Private clouds are typically owned by the respective enterprise and/or leased. Functionalities are not directly exposed to the customer. The cloud infrastructure is operated solely for a specific organization.

5. What is SAAS?

Ans: - **Software** as a service model allows to provide software application as a service to the end users. It refers to software that is deployed on a hosted service and is accessible via internet.

6. What do you mean by deployment model?

Ans: - A cloud deployment model represents a specific type of cloud environment, primarily distinguished by ownership, size and access.

7. Write a short note on PAAS?

Ans: - Platform as a service offers the runtime environment for applications it offers development tools required to develop applications.

8. What is community cloud?

Ans: - In a community cloud, the service is shared by several organizations and made available to only those groups. It may be owned and operated by the organizations or by a cloud service provider.

9. Give three examples of Community Cloud?

Ans: -Examples of community cloud:-

1. One example of using a *community cloud* would be to test-drive some high-end security products or even test out some features of a public cloud environment.
2. Another example, several organizations may require a specific application that resides on one set of cloud servers. Instead of giving each organization their own server in the cloud for this app, the hosting company allows multiple customers connect into their environment and logically segment their sessions.
3. Zimory, right scales are example of community cloud.

10. Give two examples of IAAS?

Ans: - DigitalOcean, Linode, Rackspace, Amazon Web Services (AWS), Cisco Metapod, Microsoft Azure, Google Compute Engine (GCE) are some popular examples of Iaas.

11. Define Cloud?

Ans: - The term Cloud refers to a Network or Internet. In other words, we can say that Cloud is something, which is present at remote location. Cloud can provide services over network, i.e., on public networks or on private networks, i.e., WAN, LAN or VPN. Applications such as e-mail, web conferencing, customer relationship management (CRM), all run in cloud.

12. What is trusted cloud computing?

Ans: - 1. It allows users to attest to the IaaS provider and determine whether or not the service is secure before they launch their virtual machines.
2. The goal of trusted cloud computing is to make the computation of virtual machines confidential which is deployed by the service provider.
3. Customers can verify that the computation is confidential and prevent inspection of computation state at the service provider site.

13. Give examples of Public Cloud?

Ans: - **Examples of public clouds** include Amazon Elastic Compute **Cloud** (EC2), IBM's **Blue Cloud**, **Sun Cloud**, Google AppEngine and Windows Azure.

14. Give two benefits of PAAS?

Ans: - Benefits:

1. LOWER ADMINISTRATIVE OVERHEAD.
2. LOWER TOTAL COST OF OWNERSHIP.
3. SCALABLE SOLUTIONS.

15. What is CRM?

Ans: - This is management software where details of clients are maintained from services point of view delivered to them.

16. What is SOAP? (Simple Object Access Protocol)

Ans: - Simple Object Access Protocol allows the construction of multiple web development interface supported by Paas.

UNIT -3 Grid Computing

2 MARKS

1. Grid Computing

Ans: - Grid Computing is the usage of collection of computer resource from various locations to achieve a common purpose. It works as a distributed system with non-interactive jobs i.e. separated modules of large project that involves a large no. of files.

2. Virtual organization

Ans: - A virtual organization or company is one whose members are geographically apart, usually working by computer e-mail and groupware while appearing to others to be a single, unified organization with a real physical location.

3. Hardware Virtualization or Platform virtualization

Ans: - It refers to the creation of a virtual machine that acts like a real computer with an operating system. The machine on which the virtual machine is created is called host machine and virtual machine referred as guest machine. This virtual machine is managed by a software or firmware which is known as hypervisor.

4. Software Virtualization

Ans: - Here the host system needs to completely follow guest's platform (i.e. ranging from hardware, CPU instructions, through its firmware and even the operating system.) software virtualization may be virtualized at different levels:

- Operating system virtualization.
- Application Virtualization.
- Service virtualization.

5. Full virtualization

Ans: - It is complete simulation of actual hardware of computer (host) to allow software, which consists of operating system, and other applications to be executed in complete from.

6. Partial Virtualization

Ans: - In partial virtualization some part of host environment is simulated. So some applications may need to be modified in virtual environment.

7. Emulation Virtualization

Ans: - In emulation, the virtual machine simulated the hardware and hence becomes independent of it. In this, the guest operating system does not require modification.

8. Para Virtualization

Ans: - Here, hardware of host is not simulated but guest applications are executed in their own environment to run on a separated system. So, in Para virtualization, its management modules operate with an operating system that has been adjusted to work in a virtual machine.

9. Data virtualization

Ans: - It may occur as the presentation of data as an abstract byer, independent of under flying database systems, structures and storage or as database virtualization which lies between the storage and application layers within the application stack over all.

10. Memory Virtualization

Ans: - It is done by aggregating random-access memory resources from networked systems into single memory pool.

11. Storage Virtualization

Ans: - It is the process of completely abstracting logical storage from physical storage. It can be implemented as distributed file system, virtual file system, storage hyper visor or virtual disk drive.

UNIT -4 Other Technologies

2 MARKS

1. Cluster computing

Ans: - A computing cluster is a single logical unit consisting of multiple computers that are linked through a LAN. The networked computers essentially act as a single, much more powerful machine. A computer cluster provides much faster processing speed, larger storage capacity, better data integrity superior reliability and wider availability of resources.

2. Cluster

Ans: - A cluster is a type of parallel or distributed computing system, which consists of a collection of inter connected stand-alone computer working together as a single integrated computing resource.

3. High Availability cluster

Ans: - Also known as failover clusters, mainly implemented to improve the availability of service that cluster provides. This is possible by having redundant nodes, upon failure of one node the stand by node takes care.

4. High performance cluster

Ans: - High performance cluster are mainly used to increase the performance by splitting the computational task into different nodes. They are built by connecting many ordinary computers in a network and centrally co-ordinated by some special software.

5. Load Balancing clusters

Ans: - They are created with multiple computers connected together to share computational work load. Logically there are multiple computers but function as single virtual computer.

6. Peer-to-peer (P2P) networking

Ans: - It is an application architecture that partitions takes or work load between peers. Peers are equally privileged, equipment participants in the application. They form peer-to-peer network of nodes.

7. Structured Peer-to-Peer networking

Ans: - In this, specified topology and protocols are used so that node can efficiently search the network for a file; structured peer-to-peer networks most commonly implements DHT i.e. distributed hash table in which various consistent hashing is used to assign ownership of each file to a particular peer. This enables peers to search for various resources on the network using DHT.

8. Unstructured Peer-to-Peer networking

Ans: - These don not impose a particular structures on the over by formed by network by design, but rather are formed by nodes that randomly form connections to each other.

9. Ubicomp

Ans: - It stands for Ubiquitous computing. It is a concept in software engineering where computing is made to appear everywhere and anywhere. It is a method of enhancing computer use by making many computers available throughout the physical environment but making them effectively invisible to the user.

10. Utility computing

Ans: - It is a service provisioning model in which a service provider makes computing resources and infrastructure management available to the customer as needed and charges them for specific usage rather than a flat rate.

11. Hybrid model

Ans: - Hybrid model is a combination of peer-to-peer and client-server model. A common hybrid model is to have a central server that helps peers find each other. There are a variety of hybrid models, all of which make trade-offs between the centralized functionality provided by a structured server-client network.

UNIT -1 Cloud Computing

4 MARKS

1. Why cloud computing brings new threats?
2. Explain the concept of business and IT perspective w.r.t. cloud computing.
3. Explain the two fundamental functions identity management and access control, which are required for secure cloud computing.
4. What is trusted cloud computing?
5. Write three major features for infrastructure and strategy planning in cloud computing.

OR

Give the Characteristics of Cloud Computing.

6. Explain the four major barriers to large scale adoption of cloud services.

OR

Give the disadvantages of Cloud Computing?

7. Explain the areas where cloud computing can be adopted.

8. Write few points on the cost factor related to the cloud computing.
9. Give the reasons for organizations migrating to cloud computing.
10. Write few points on the cost factor related to the cloud computing.

10 MARKS

1. What are the challenges of Cloud computing?
2. Give the advantages and disadvantages of Cloud Computing.

UNIT -2 Cloud Computing Service Models and deployment Models

4 MARKS

1. What are the security concerns that should be considered for the cloud deployments?
2. What is hybrid cloud? List out the different types of hybrid clouds.
3. Write a note on the benefits of adopting the cloud.
4. Define following terms:
 - a. Resource Pooling
 - b. Dynamic Provisioning
5. Define Characteristics of IAAS Model.
6. Explain about private cloud along with diagram.
7. Differentiate between Public Cloud and Private Cloud.
8. Explain the cloud model impact and also explain the benefits of public cloud.

10 MARKS

1. What is cloud computing? What are various advantages of cloud computing?
2. Enlist and explain three service models used in cloud computing? Explain with example.
3. List out the ways how cloud vendors are addressing the client challenges. Give examples.
4. Write a short note on "Deployment Models."

UNIT -3 Grid Computing

4 MARKS

1. What are various advantages of grid computing?
2. What is Grid computing? How grid computing works?
3. Define Virtualization and Hardware virtualization.
4. Explain following types of virtualization:
 - a. Memory
 - b. Data
 - c. Storage
 - d. Network

10 MARKS

1. Define Virtualization. Explain Different types of virtualization Techniques.

4 MARKS

1. Explain with suitable example the utility computing.
2. With a neat diagram explain the cloud characteristics.
3. Differentiate between ubiquitous computing vs. cluster computing.
4. Explain Structured vs. unstructured P2P networks.
5. Explain various interconnection technologies used in Cluster Computing. (Gigabit, Ethernet, Gigabit LAN, Inband (P.No. 77))
6. What is hybrid Model? Give its benefits.
7. Define Cluster Computing along with its architecture.
8. List various advantages of utility computing.
9. Give various limitations of Grid Computing.
10. Role of grid computing in virtual organization.
11. Differentiate between utility computing and P2P computing.
- 12.

10 MARKS

1. Compare Grid Computing and cloud computing.
2. Define Grid Computing, Enlist and explain essential applications of grid computing.
3. Compare Grid, Cluster and Cloud Computing techniques.