

General

1. *Differentiate between Cloud, Grid and Cluster Computing?*
2. Discuss classification of Distributed and Parallel Computing Systems
3. Explain the energy efficiency in Distributed computing.
4. Differentiate between Client Server and Peer to Peer Distributed Computing model.
5. Explain the hardware architectures for parallel computing with suitable examples.
6. *Compare how Modern Infrastructure like Cloud is better than Traditional IT Infrastructure*
7. What are the economics concerns related with cloud computing?
8. Differentiate among emulation, simulation, and virtualization
 - *Classification of Parallel Computing Systems.*
9. Discuss in detail the major distributed computing technologies that led to the concept Cloud computing?
10. *Relate utility computing model with cloud computing model. Are these models same. If not, why?*

Virtualization and Hypervisor Based

1. *Enlist VMM design requirements.*
2. *Describe the Machine Reference model in detail.*
3. *Discuss the importance of API, ABI and ISA in design of hypervisors in context of Machine Reference model.*
4. *Discuss*
 - *Hardware -assisted Virtualization*
 - *Full Virtualization*
 - *Para Virtualization*
 - *Partial Virtualization*
5. *Define Hypervisor? Explain its components and types in detail.*
6. Explain the differences between full-virtualization and para-virtualization and give one example VMM (virtual machine monitor), that was built in each of the two categories.
7. What are the features of Storage Virtualization? Suggest appropriate storage architecture for storing high volume structured data.
8. Differentiate full virtualization and para-virtualization.
9. *Differentiate between container and virtual machines*
10. What are the features of Storage Virtualization? Suggest appropriate storage architecture for storing high volume structured data
11. What are the different types of virtualizations? Explain the different architectures for design of storage virtualization.
12. Discuss instruction types based on security rings and privileged mode
13. *Discuss the Virtualization execution environment on the basis of following virtualization features:*

- ☐ *Sharing*
- ☐ *Aggregation*
- ☐ *Emulation*
- ☐ *Isolation*

14. Illustrate Operating System Level Virtualization with the help of suitable examples.

11. Discuss:

- Security aspect in Programming Language level Virtualization.
- *Absence of Hypervisor in OS Level Virtualization.*
- *Instruction types based on security rings and privileged mode.*

Hypervisor Architectures

1. Explain VMware Hypervisor architecture with the help of diagram.
2. Explain Xen Hypervisor architecture with the help of diagram.
3. Explain Microsoft Hyper-V architecture with the help of diagram.

Cloud Features, Deployment and Delivery Models Based

1. Illustrate various cloud deployment models. Also differentiate between them
2. Enlist & explain the characteristics of cloud computing
3. Write short notes on:
 - Load Balancing in Cloud
 - Virtual Machine Migration
 - *Horizontal vs Vertical Scaling in Cloud Computing*
4. *A company has decided to leverage the web conferencing services provided by a cloud provider and to pay for those services as they are used. The cloud provider manages the infrastructure and any application upgrades. What kind of cloud model is this company providing? Also compare this delivery model with other models.*
5. *Distinguish the security aspects in Private & Public cloud.*
6. Discuss the architectures of Load Balancers.
7. Elaborate SOA? Illustrate using architecture that how two software communicate using SOA.
8. A Company wants to build a test environment to test software updates and new solutions. The environment should mirror the production environment and be secure and inaccessible from outside the company network. The company doesn't want to invest in infrastructure that may be idle for a significant amount of time. Show which cloud computing model will satisfy the requirement? Compare the model with other cloud computing models too.
9. Write short notes on:
 - AWS EC2
 - Disaster Recovery in Cloud

10. Cloud has been around a while now, but the deployment models and their use cases are still misty. Business models find it hard to analyze the pros, cons, and needs for the three cloud deployment models: Public, Private and Hybrid. Differentiate between different cloud deployment models and explain the cases for Netflix, State Bank of India, BBC with logical arguments.
11. What is cloud computing? Discuss its anatomy in detail.
12. ***Define Cloud Computing? Explain Cloud Reference model in detail with the help of suitable diagrams.***
13. Discuss the different cloud deployment decision factor in context of hybrid cloud.
14. ***A software tester who is testing a complex application that is running within a single virtual machine, has recently encountered a rare and intermittent software defect that developers have been unable to reproduce or troubleshoot in the past. What steps should be taken by the software tester to allow developers to recreate the issue. Support your answer with suitable examples.***
15. ***A company currently experiences 8 to 10 percent utilization of its development and test computing resources. The company would like to consolidate to reduce the number of total resources in their data center and decrease energy costs. Which feature and what kind computing environment they should opt for and why? Support your answer with suitable examples***
16. Discuss in detail the major distributed computing technologies that led to the concept Cloud computing?
17. Discuss the role of Load Balancer and SLA Monitoring in cloud computing.
18. ***Elaborate VPN? Classify and explain its types***

Cloud Workload Based

1. Describe which kind of cloud workloads are suitable for public clouds.
2. ***Justify why Workload Categorization is important in Cloud Computing Environment? Explain the various categories of Workloads suitable for cloud environment.***
3. Justify how workload Categorization is necessary in Cloud Environment? Also enlist and explain the categories of workload in cloud environment with reference to the characteristics of their computing resources.
4. What are the different types of workloads? Explain each in detail.