



U23CST71-CLOUD COMPUTING QUESTION BANK/III-IT/V SEM/DSEC
DHANALAKSHMI SRINIVASAN ENGINEERING COLLEGE
(AUTONOMOUS)

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UNIT I – CLOUD ARCHITECTURE MODELS AND INFRASTRUCTURE

Part A

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1. What is cloud computing architecture?
 2. Define NIST Cloud Computing Reference Architecture.
 3. What are cloud deployment models?
 4. List the cloud service models.
 5. Define distributed computing.
 6. What is a system model in cloud computing?
 7. Explain the role of front-end and back-end in cloud architecture.
 8. What is IaaS in cloud service model?
 9. Define PaaS with an example.
 10. Mention two characteristics of SaaS.
 11. What is elasticity in cloud computing?
 12. Define scalability in cloud infrastructure.
 13. List any two design challenges in compute clouds.
 14. What are storage clouds?
 15. Define the term 'multi-tenancy' in cloud architecture.
 16. What is a broker in cloud computing?
 17. Explain the term 'cloud consumer'.
 18. What is a cloud carrier?
 19. What are the benefits of cloud architecture?
 20. List any two advantages of using cloud models.
 21. What is on-demand self-service in cloud?
 22. Mention any two limitations of cloud computing.
 23. What is virtualization in context of cloud architecture?
 24. Define cloud orchestration.
 25. What is resource pooling in cloud computing?
 26. What is a hypervisor?
 27. State any two features of NIST model.
 28. Differentiate between public and private cloud.
 29. Define hybrid cloud.
 30. What is the role of service level agreement (SLA)?

Part B

1. Explain the NIST Cloud Computing Reference Architecture with a neat diagram.
2. Discuss various cloud deployment and service models.

3. Describe the architectural design of compute and storage clouds and design challenges.
4. Explain the key system models used in distributed and cloud computing.
5. Compare public, private, hybrid, and community cloud models with examples.
6. Describe the key benefits and risks associated with cloud computing models.
7. Explain the layered architecture of cloud computing and its components.
8. Discuss the characteristics of cloud computing as per NIST.

UNIT II – VIRTUALIZATION BASICS

Part A

1. What is virtualization?
2. Define hypervisor.
3. List types of virtualization.
4. What is full virtualization?
5. What is para virtualization?
6. Define hardware virtualization.
7. What is the role of hypervisor in virtualization?
8. What are the implementation levels of virtualization?
9. Differentiate between Type 1 and Type 2 hypervisors.
10. What is the function of a virtual machine monitor (VMM)?
11. List any two advantages of virtualization.
12. What is CPU virtualization?
13. Define memory virtualization.
14. What is I/O virtualization?
15. What are the benefits of using hypervisors?
16. Define virtual machine.
17. What is the use of virtualized memory?
18. Explain instruction set virtualization.
19. What is an emulation in virtualization?
20. What is the main use of virtualization in cloud computing?
21. Define isolation in virtualization.
22. What is resource abstraction in virtualization?
23. Explain VM migration.
24. State any two virtualization tools.
25. What is OS-level virtualization?
26. Define guest OS.
27. What is host OS?
28. List two limitations of virtualization.
29. What is virtual memory?
30. Differentiate between software and hardware virtualization.

Part B

1. Explain the taxonomy of virtual machines and the role of hypervisors.
2. Describe the implementation levels and types of virtualization in detail.
3. Explain CPU, Memory, and I/O virtualization with suitable diagrams.

4. Compare and contrast full virtualization and para virtualization.
5. Discuss the working and architecture of hypervisors.
6. Explain the benefits and limitations of virtualization in cloud computing.
7. Describe the virtualization structure and its types.
8. Illustrate hardware-level and OS-level virtualization with examples.

UNIT III – Virtualization Infrastructure and Docker

Part A

1. What is desktop virtualization?
2. Define network virtualization.
3. What is storage virtualization?
4. What is system-level virtualization?
5. What is application virtualization?
6. List benefits of desktop virtualization.
7. Define virtual cluster.
8. What is resource management in virtualization?
9. Define Docker.
10. List components of Docker.
11. What is a Docker container?
12. What is a Docker image?
13. What is Docker Hub?
14. Differentiate between Docker and Virtual Machines.
15. What is the role of Docker daemon?
16. What is containerization?
17. What is the purpose of a container repository?
18. Define lightweight virtualization.
19. What are the advantages of using Docker in cloud computing?
20. What is image layering in Docker?
21. Explain Dockerfile.
22. What is the use of Docker Compose?
23. What is the purpose of Docker volumes?
24. What is kernel sharing in containers?
25. What is orchestration in container environments?
26. Define container image.
27. What is container networking?
28. List any two container runtime engines.
29. What is difference between virtual clusters and real clusters?
30. What are namespaces in Docker?

Part B

1. Compare Desktop, Network, and Storage Virtualization with examples.
2. Explain Docker architecture, container lifecycle, and its advantages.
3. Discuss Docker Containers vs Virtual Machines.
4. Describe virtual clusters and their resource management.

5. Explain the steps involved in creating Docker images and containers.
6. Discuss various types of virtualization and how Docker differs from them.
7. Explain system-level and application virtualization with use cases.
8. Describe how Docker supports microservices architecture.

UNIT IV – Cloud Deployment Environment

Part A

1. What is Amazon AWS?
2. Define Microsoft Azure.
3. What is Google App Engine?
4. What is OpenStack?
5. Define Eucalyptus.
6. What is a public cloud provider?
7. List services offered by AWS.
8. What is EC2 in AWS?
9. Define PaaS with an example.
10. What is the role of Azure Resource Manager?
11. List storage options in AWS.
12. What is OpenStack Nova?
13. Define cloud orchestration.
14. What are key features of Google App Engine?
15. Define scalability in cloud deployment.
16. What is cloud elasticity?
17. List modules of OpenStack.
18. Define private cloud.
19. What is hybrid cloud deployment?
20. Define cloud tenant.
21. What is identity service in OpenStack?
22. Mention two advantages of using Azure.
23. What is object storage in cloud?
24. Define the role of APIs in cloud deployment.
25. What is Google Cloud SDK?
26. Define elasticity in cloud services.
27. List any two benefits of OpenStack.
28. What is cloud management platform?
29. Define multitenancy.
30. What is AWS Lambda?

Part B

1. Compare Amazon AWS, Microsoft Azure, and Google App Engine in terms of services.
2. Explain the architecture and key components of OpenStack.
3. Describe the deployment and functioning of cloud software environments.
4. Discuss the features of Eucalyptus in private cloud implementation.

5. Explain the differences between private, public, and hybrid cloud platforms.
6. Describe cloud resource provisioning using AWS and Azure.
7. Explain IaaS, PaaS, and SaaS using AWS/Azure examples.
8. Discuss the service models and deployment mechanisms of OpenStack.

UNIT V – Cloud Security

Part A

1. Define cloud security.
2. What is virtualization attack?
3. Explain guest hopping.
4. Define VM migration attack.
5. What is hyperjacking?
6. Define IAM.
7. List IAM challenges.
8. What is IAM architecture?
9. What is data confidentiality?
10. Define data integrity.
11. List two cloud storage security mechanisms.
12. What is multi-factor authentication?
13. Define access control.
14. What is cloud compliance?
15. What is encryption in cloud storage?
16. Define secure cloud gateway.
17. What is identity federation?
18. What is token-based authentication?
19. List two security threats in cloud.
20. What is cloud auditing?
21. What is SLA in cloud security?
22. What is cloud vulnerability assessment?
23. Define denial of service attack.
24. What is threat modeling?
25. Define cloud firewall.
26. What is zero-trust model?
27. What is the principle of least privilege?
28. Define honeypot in cloud.
29. What is data masking?
30. What are IAM best practices?

Part B

1. Explain various virtualization system-specific attacks and their mitigations.
2. Describe the architecture and challenges of IAM in cloud computing.
3. Discuss cloud data security and storage management strategies.
4. Explain encryption techniques and access control mechanisms in cloud.

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5. Discuss identity management in multi-cloud environments.
6. Explain cloud security threats and countermeasures.
7. Describe the implementation of IAM in AWS or Azure.
8. Explain cloud compliance and auditing frameworks.