

Cloud Computing

1. Illustrate the various evolutions of cloud computing.
2. Cloud Computing is a cost-effective technology. Justify your answer.
3. Compare Type 1 and Type 2 hypervisor with the required diagram
4. Illustrate the various hardware virtualization techniques with the Ring structure diagram.
5. “Virtualization is considered to be the backbone of Cloud Computing”. Justify your answer. Can Cloud Computing exist without virtualization? Illustrate your answers.
6. Compare public cloud and private cloud. Why it is difficult to manage private cloud infrastructure?
7. What are the various roles played by the cloud provider? Illustrate in detail.
8. Illustrate the components of a virtualized data center and compare it with the classical data center. Illustrate the various backup techniques used in the virtualized data center.
9. Define data center
10. List out the components of Virtualized data center
11. What is Region in AWS?
12. Define AWS IAM Role and policies.
13. What is DevOps?
14. Compare Full virtualization and Para virtualization
15. Illustrate the working principle of DevOps and highlight its benefits.
16. Explain the strategies to safeguard the cloud infrastructure using the intrusion detection system.
17. Illustrate the auto-scaling process and how the Load balancer is managed in AWS?
18. Compare Agile model and DevOps for health care application.
19. Compare Application and desktop virtualization. Do you think Desktop virtualization is secure for accessing secure data?. Mention the various techniques to secure it.
20. Compare block storage and object storage
21. What is use of AWS Sage maker service?
22. What is key pair for the instance?
23. What is hypervisor?
24. Define intrusion detection system
25. What are the essential characteristics of cloud computing as defined by NIST? Explain each with examples.
26. Explain IaaS, PaaS, and SaaS with suitable real-world examples. How do they differ in terms of user responsibility?
27. What is elasticity in cloud computing? How is it different from scalability?

Software Engineering

1. Compare hardware and software.
2. What is meant by the changing nature of software?
3. Explain software engineering as a discipline.
4. What are software development myths? Explain.
5. Explain the generic software process model.
6. How do you identify a task set in software engineering? Explain.

7. Explain agile process model.
8. Compare RAD and incremental model.
9. Explain Extreme Programming (XP).
10. What is Scrum? Explain its key components.
11. Write the formula for Risk Exposure (RE).
12. As an expert, you have been asked to develop a driverless taxi. List the risks involved and specify the corresponding risk mitigation plan
13. Explain functional and non-functional requirements.
14. Why is a Software Requirements Specification (SRS) required? Explain.
15. What is requirements elicitation and analysis? Explain.
16. How do you validate the requirements?
17. What is requirements management? Explain.
18. Compare activity diagram and sequence diagram.
19. What are context models?
20. What are architectural patterns? Give examples.
21. Explain object-oriented design using UML.
22. What is open-source software development?
23. Define glass box (white box) testing.
24. What is boundary value partitioning? Explain.
25. Compare manual testing and automation testing.
26. Explain unit testing, integration testing, and system testing.
27. Explain the bug life cycle.

System Analysis and Design

1. What is the purpose of systems analysis? Why is it important?
2. List the six core processes for software systems development.
3. Which phase in the SDLC is the most important? Justify your answer.
4. What is the break-even point for a project? How is it calculated?
5. Describe how projects are selected in organizations.
6. What are Computer-Aided Software Engineering (CASE) tools? Explain their advantages in system analysis and design.
7. What is meant by Agile development and iterative development?
8. List the different elicitation techniques used in requirements gathering.
9. "Interviews should always be conducted as structured interviews." Do you agree? Justify your answer.
10. What are the different types of feasibility analysis, and when are they used?
11. What is a process model? What is a data flow diagram (DFD)? How are they related?
12. Give an example of a closed-ended question, an open-ended question, and a probing question. When would each be used?
13. List the characteristics of a good user interface.
14. Write a short note on structure charts.
15. When would you use electronic reports rather than paper reports, and vice versa?
16. Explain the transition from requirements to design in system development.
17. What is the purpose of a sequence diagram?
18. Define software testing.

19. Differentiate pilot conversion, phased conversion, and simultaneous conversion.
20. Explain unit testing, integration testing, system testing, and acceptance testing.
21. What types of documentation are produced during system implementation?
22. Explain the bug life cycle and its importance in system implementation.
23. List the main characteristics of object-oriented systems.
24. What is the purpose of a use case diagram?
25. What is the purpose of a class diagram? Explain with an example.
26. Explain the behavioral state machine diagram with an example scenario.
27. Compare and contrast black-box testing and white-box testing.