Unit I - Virtualization Techniques and Overview of Distributed Computing:

1. Scenario: A company wants to reduce its hardware costs and improve resource utilization. Which virtua lization technique should they consider?
   a) Application virtualization
   b) Network virtualization
   c) Server virtualization
   d) Storage virtualization
   Answer: c) Server virtualization

2. Scenario: A large organization wants to isolate different departments' network traffic to enhance securit y. Which technology should they implement?
   a) SLAN (Software-Defined Local Area Network)
   b) VLAN (Virtual Local Area Network)
   c) VSAN (Virtual Storage Area Network)
   d) PAN (Personal Area Network)
   Answer: b) VLAN (Virtual Local Area Network)

3. Scenario: An IT department is looking to improve data backup and disaster recovery processes. What i s the primary benefit of using Virtual Storage Area Networks (VSANs)?
   a) Improved data encryption
   b) Simplified network management
   c) Enhanced data compression
   d) Faster data transfer speeds
   Answer: b) Simplified network management

4. Scenario: A software company needs to run multiple versions of an application for testing purposes wit hout affecting production systems. What type of virtualization would be most suitable?
   a) Application virtualization
   b) Network virtualization
   c) Server virtualization
   d) Storage virtualization
   Answer: a) Application virtualization

5. Scenario: A research institution requires a computing environment where multiple processors work tog ether on complex scientific simulations. What type of computing system is most appropriate?
   a) Parallel computing
   b) Mainframe computing
   c) Supercomputing
   d) Distributed computing
   Answer: a) Parallel computing

Unit II - Cloud Computing and Migration:

6. Scenario: A startup company wants to minimize upfront infrastructure costs and scale resources as nee ded. Which cloud service model should they choose?
   a) IaaS (Infrastructure as a Service)
   b) PaaS (Platform as a Service)
   c) SaaS (Software as a Service)
   d) HaaS (Hardware as a Service)
   Answer: a) IaaS (Infrastructure as a Service)

7. Scenario: A multinational corporation has decided to move its data and applications to the cloud to impr ove accessibility. What is the key benefit of cloud infrastructure management in this context?

a) Enhanced security
b) Reduced latency
c) Scalability
d) Vendor lock-in
Answer: c) Scalability

8. Scenario: A company is concerned about data security and wants to maintain control over its applicatio ns and data while still benefiting from cloud resources. Which cloud deployment model should they consid er?
a) Public cloud
b) Private cloud
c) Hybrid cloud
d) Community cloud
Answer: b) Private cloud

9. Scenario: An organization is planning to migrate its legacy applications to the cloud and needs to ensur e seamless integration. Which cloud middleware concept should they focus on?
a) Interoperability
b) Scalability
c) Virtualization
d) Load balancing
Answer: a) Interoperability

10. Scenario: A company has experienced performance issues with their cloud-hosted application. What c loud computing characteristic should they assess to address this issue?
a) On-demand self-service
b) Resource pooling
c) Broad network access
d) Measured service
Answer: b) Resource pooling

Unit I - Virtualization Techniques and Overview of Distributed Computing:

11. Scenario: A company wants to ensure high availability and fault tolerance for its critical applications. Which virtualization technique should they consider for achieving this goal?
a) Application virtualization
b) Network virtualization
c) Server virtualization
d) Storage virtualization
Answer: c) Server virtualization

12. Scenario: An organization is experiencing rapid growth and needs to optimize its IT infrastructure. Wh at is the primary advantage of using virtualization in this scenario?
a) Improved energy efficiency
b) Enhanced network security
c) Reduced hardware costs
d) Faster data transmission
Answer: c) Reduced hardware costs

13. Scenario: A data center needs to separate different customer’s data and networks on shared infrastru cture. Which technology is best suited for achieving this segregation?
a) VLAN (Virtual Local Area Network)
b) SLAN (Software-Defined Local Area Network)
c) SAN (Storage Area Network)
d) VSAN (Virtual Storage Area Network)

Answer: d) VSAN (Virtual Storage Area Network)

14. Scenario: A company is concerned about data isolation and wants to ensure that data from one customer does not mix with data from another customer. Which virtualization concept can address this concern?
a) VLAN (Virtual Local Area Network)
b) SLAN (Software-Defined Local Area Network)
c) VSAN (Virtual Storage Area Network)
d) VLAN (Virtual Storage Area Network)
Answer: a) VLAN (Virtual Local Area Network)

15. Scenario: An e-commerce website experiences increased traffic during holiday sales. Which virtualization technique can help the website scale its resources dynamically to handle the traffic spikes?
a) Application virtualization
b) Server virtualization
c) Network virtualization
d) Cloud virtualization
Answer: b) Server virtualization

Unit II - Cloud Computing and Migration:

16. Scenario: A startup company wants to quickly deploy a web application without managing the underlying infrastructure. Which cloud service model should they choose?
a) IaaS (Infrastructure as a Service)
b) PaaS (Platform as a Service)
c) SaaS (Software as a Service)
d) HaaS (Hardware as a Service)
Answer: b) PaaS (Platform as a Service)

17. Scenario: An organization is concerned about data privacy regulations and wants to maintain full control over data storage. Which cloud deployment model should they consider?
a) Public cloud
b) Private cloud
c) Hybrid cloud
d) Community cloud
Answer: b) Private cloud

18. Scenario: A company needs to quickly deploy a customer relationship management (CRM) software without purchasing and configuring hardware. Which cloud service should they opt for?
a) IaaS (Infrastructure as a Service)
b) PaaS (Platform as a Service)
c) SaaS (Software as a Service)
d) HaaS (Hardware as a Service)
Answer: c) SaaS (Software as a Service)

19. Scenario: An organization wants to ensure high performance and low latency for its data-intensive applications. Which cloud characteristic is critical in this context?
a) On-demand self-service
b) Resource pooling
c) Broad network access
d) Measured service
Answer: b) Resource pooling

20. Scenario: A company is planning to migrate its existing applications to the cloud and needs to minimize the risk of data loss during the transition. What should they consider as part of their migration strategy?

a) Cloud bursting
b) Data migration and streaming
c) Interoperability
d) Virtualization
Answer: b) Data migration and streaming

Unit III - Cloud Architecture:

21. Scenario: A company's website experiences a sudden surge in traffic due to a viral marketing campai gn. What cloud architecture concept can help the website handle the increased load?
a) Workload distribution architecture
b) Capacity planning
c) Disk provisioning architecture
d) Dynamic failure detection and recovery architecture
Answer: a) Workload distribution architecture

22. Scenario: An e-commerce platform needs to ensure that customer data is stored redundantly to avoid data loss in case of hardware failures. Which cloud architecture component addresses this requirement?
a) Service Level Agreements (SLAs)
b) Cloud bursting architecture
c) Disk provisioning architecture
d) Dynamic failure detection and recovery architecture
Answer: c) Disk provisioning architecture

23. Scenario: An organization is migrating its mission-critical applications to the cloud and needs to ensur e guaranteed service levels. What should they establish with their cloud provider?
a) Service Level Agreements (SLAs)
b) Service Oriented Architecture (SOA)
c) Cloud bursting architecture
d) Disk provisioning architecture
Answer: a) Service Level Agreements (SLAs)

24. Scenario: A company's cloud-based application needs to recover quickly from system failures to mini mize downtime. Which cloud architecture component is responsible for this?
a) Workload distribution architecture
b) Capacity planning
c) Dynamic failure detection and recovery architecture
d) Cloud bursting architecture
Answer: c) Dynamic failure detection and recovery architecture

25. Scenario: An organization wants to adopt a microservices architecture for its cloud-based applications to enhance scalability and maintainability. What architectural concept aligns with this approach?
a) Service Level Agreements (SLAs)
b) Service Oriented Architecture (SOA)
c) Cloud bursting architecture
d) Workload distribution architecture
Answer: b) Service Oriented Architecture (SOA)

Unit I - Virtualization Techniques and Overview of Distributed Computing:

26. Scenario: A company has a limited budget for hardware, and they want to consolidate their server res ources to save costs. Which virtualization technique should they adopt?
a) Application virtualization
b) Network virtualization
c) Server virtualization

d) Storage virtualization
Answer: c) Server virtualization

27. Scenario: An organization needs to ensure that its critical data remains accessible even in the event o f hardware failures. Which virtualization concept can help achieve high availability?
a) SLAN (Software-Defined Local Area Network)
b) VLAN (Virtual Local Area Network)
c) VSAN (Virtual Storage Area Network)
d) RAID (Redundant Array of Independent Disks)
Answer: d) RAID (Redundant Array of Independent Disks)

28. Scenario: A large data center aims to improve resource allocation and make efficient use of storage. Which type of virtualization would be most beneficial?
a) Application virtualization
b) Network virtualization
c) Server virtualization
d) Storage virtualization
Answer: d) Storage virtualization

29. Scenario: A company wants to create isolated network segments within its data center to improve sec urity. Which virtualization technology should they implement?
a) VLAN (Virtual Local Area Network)
b) SLAN (Software-Defined Local Area Network)
c) VSAN (Virtual Storage Area Network)
d) PAN (Personal Area Network)
Answer: a) VLAN (Virtual Local Area Network)

30. Scenario: An organization is experiencing resource contention issues on its physical servers, leading t o performance degradation. Which virtualization benefit can help mitigate this issue?
a) Improved data encryption
b) Simplified network management
c) Enhanced resource isolation
d) Faster data transfer speeds
Answer: c) Enhanced resource isolation

Unit II - Cloud Computing and Migration:

31. Scenario: A company is planning to develop a new software product and wants to focus on coding rat her than infrastructure management. Which cloud service model should they choose?
a) IaaS (Infrastructure as a Service)
b) PaaS (Platform as a Service)
c) SaaS (Software as a Service)
d) HaaS (Hardware as a Service)
Answer: b) PaaS (Platform as a Service)

32. Scenario: An organization has a limited IT budget and wants to minimize capital expenses. Which clo ud deployment model aligns with this objective?
a) Public cloud
b) Private cloud
c) Hybrid cloud
d) Community cloud
Answer: a) Public cloud

33. Scenario: A company needs to provide its employees with access to office productivity tools like email and document editing without hosting an on-premises server. What cloud service model should they cons

ider?
a) IaaS (Infrastructure as a Service)
b) PaaS (Platform as a Service)
c) SaaS (Software as a Service)
d) HaaS (Hardware as a Service)
Answer: c) SaaS (Software as a Service)

34. Scenario: A business wants to ensure that its data is stored in geographically dispersed data centers f or disaster recovery purposes. Which cloud characteristic addresses this requirement?
a) On-demand self-service
b) Resource pooling
c) Broad network access
d) Geographic distribution
Answer: d) Geographic distribution

35. Scenario: An organization is planning to migrate its legacy applications to the cloud and is concerned about data security and privacy. What should they consider when selecting a cloud provider?
a) Data migration and streaming
b) Data sovereignty and compliance
c) Cloud bursting architecture
d) Network latency
Answer: b) Data sovereignty and compliance

Unit III - Cloud Architecture:

36. Scenario: A company wants to ensure that its cloud-based applications can seamlessly handle increa sed user traffic during peak hours. What cloud architecture concept can help with this scalability?
a) Workload distribution architecture
b) Capacity planning
c) Disk provisioning architecture
d) Dynamic failure detection and recovery architecture
Answer: a) Workload distribution architecture

37. Scenario: An e-commerce platform needs to store large volumes of product images and videos in the cloud. What cloud architecture component can optimize storage efficiency and retrieval speed?
a) Service Level Agreements (SLAs)
b) Cloud bursting architecture
c) Disk provisioning architecture
d) Content delivery networks (CDNs)
Answer: d) Content delivery networks (CDNs)

38. Scenario: A company is concerned about maintaining consistent performance for its cloud-hosted app lications and wants to establish performance guarantees with the cloud provider. What should they rely on ?
a) Service Oriented Architecture (SOA)
b) Quality of Service (QoS)
c) Cloud bursting architecture
d) Disk provisioning architecture
Answer: b) Quality of Service (QoS)

39. Scenario: An organization needs to ensure that its cloud infrastructure can recover quickly from failure s to minimize downtime. What cloud architecture component should they focus on?
a) Workload distribution architecture
b) Dynamic failure detection and recovery architecture
c) Cloud bursting architecture

d) Capacity planning
Answer: b) Dynamic failure detection and recovery architecture

40. Scenario: A company is planning to transition its monolithic applications to microservices architecture i n the cloud. What architectural concept aligns with this modernization approach?
a) Service Level Agreements (SLAs)
b) Service Oriented Architecture (SOA)
c) Cloud bursting architecture
d) Workload distribution architecture
Answer: b) Service Oriented Architecture (SOA)

Unit I - Virtualization Techniques and Overview of Distributed Computing:

41. Scenario: A company wants to improve its data center's resource utilization by running multiple operat ing systems on a single physical machine. Which virtualization technique is most suitable for this scenario ?
a) Application virtualization
b) Network virtualization
c) Server virtualization
d) Storage virtualization
Answer: c) Server virtualization

42. Scenario: An organization is concerned about network security and wants to logically isolate different departments' traffic within the same physical network infrastructure. What technology should they implem ent?
a) SLAN (Software-Defined Local Area Network)
b) VLAN (Virtual Local Area Network)
c) VSAN (Virtual Storage Area Network)
d) PAN (Personal Area Network)
Answer: b) VLAN (Virtual Local Area Network)

43. Scenario: A company is experiencing difficulties managing its storage resources efficiently. What is a primary benefit of implementing Storage Area Networks (SANs) in this context?
a) Improved data encryption
b) Simplified network management
c) Enhanced data backup capabilities
d) Faster data transfer speeds
Answer: c) Enhanced data backup capabilities

44. Scenario: An organization needs to run Windows and Linux applications side by side on the same co mputer without compatibility issues. What virtualization type can help achieve this?
a) Application virtualization
b) Network virtualization
c) Server virtualization
d) Storage virtualization
Answer: c) Server virtualization

45. Scenario: A scientific research institution needs to process complex simulations that require multiple p rocessors to work together. Which type of computing system is most appropriate for this purpose?
a) Parallel computing
b) Mainframe computing
c) Supercomputing
d) Distributed computing
Answer: c) Supercomputing

Unit II - Cloud Computing and Migration:

46. Scenario: A startup company wants to reduce IT infrastructure costs and avoid the need for on-premises hardware. What cloud service model aligns with these goals?
    a) IaaS (Infrastructure as a Service)
    b) PaaS (Platform as a Service)
    c) SaaS (Software as a Service)
    d) HaaS (Hardware as a Service)
    Answer: a) IaaS (Infrastructure as a Service)

47. Scenario: A multinational corporation is planning to migrate its business applications to the cloud. They want to maintain complete control over their infrastructure. What cloud deployment model should they choose?
    a) Public cloud
    b) Private cloud
    c) Hybrid cloud
    d) Community cloud
    Answer: b) Private cloud

48. Scenario: An organization needs to provide remote employees with access to virtual desktops without worrying about hardware procurement and maintenance. What cloud service model should they consider?
    a) IaaS (Infrastructure as a Service)
    b) PaaS (Platform as a Service)
    c) SaaS (Software as a Service)
    d) HaaS (Hardware as a Service)
    Answer: a) IaaS (Infrastructure as a Service)

49. Scenario: A company's website experiences seasonal traffic spikes during holidays and promotions. What cloud characteristic can help the website scale resources on-demand?
    a) On-demand self-service
    b) Resource pooling
    c) Broad network access
    d) Geographic distribution
    Answer: a) On-demand self-service

50. Scenario: An organization is planning to migrate its database to the cloud. They want to ensure minimal data transfer latency and optimal database performance. What should they consider as part of their migration strategy?
    a) Data migration and streaming
    b) Cloud bursting architecture
    c) Interoperability
    d) Geographic distribution
    Answer: a) Data migration and streaming

Unit III - Cloud Architecture:

51. Scenario: A company has a cloud-based e-commerce platform that needs to automatically scale resources based on traffic patterns. What cloud architecture concept aligns with this requirement?
    a) Workload distribution architecture
    b) Capacity planning
    c) Disk provisioning architecture
    d) Auto-scaling architecture
    Answer: d) Auto-scaling architecture

52. Scenario: An organization needs to optimize its cloud resource allocation to minimize costs while ensuring acceptable performance levels. What cloud architecture component addresses this challenge?
a) Service Level Agreements (SLAs)
b) Cloud bursting architecture
c) Disk provisioning architecture
d) Resource management and optimization architecture
Answer: d) Resource management and optimization architecture

53. Scenario: A company wants to ensure that its cloud-based applications can recover quickly from failures to maintain high availability. Which cloud architecture concept should they prioritize?
a) Workload distribution architecture
b) Capacity planning
c) Dynamic failure detection and recovery architecture
d) Disk provisioning architecture
Answer: c) Dynamic failure detection and recovery architecture

54. Scenario: An organization is using cloud resources for data analytics and wants to ensure that its data is stored securely and meets compliance requirements. What cloud architecture component is essential for data security?
a) Service Level Agreements (SLAs)
b) Disk provisioning architecture
c) Data encryption architecture
d) Network latency optimization architecture
Answer: c) Data encryption architecture

55. Scenario: A company is planning to transition from a monolithic application architecture to a microservices-based architecture in the cloud. What architectural concept aligns with this modernization approach?
a) Workload distribution architecture
b) Service Oriented Architecture (SOA)
c) Cloud bursting architecture
d) Microservices architecture
Answer: d) Microservices architecture