Notifications Messages Search S.

My courses > S2-24_SEZG583 > General > Quiz 1

Status	Finished
Started	Saturday, 22 February 2025, 1:10 PM
Completed	Saturday, 22 February 2025, 1:18 PM
Duration	7 mins 32 secs
Grade	**5.00** out of 5.00 (**100**%)

Question 1

Correct

Mark 0.25 out of 0.25

Which of the following describes the main challenge of achieving consistency in a distributed system?

- a. Ensuring that all components run at the same speed
- b. Preventing data duplication
- c. Minimizing the network latency between nodes
- d. Ensuring data is the same across all nodes after updates ⊘

Your answer is correct.

The correct answer is: Ensuring data is the same across all nodes after updates

Question 2

Correct

Mark 0.25 out of 0.25

What is the primary purpose of partitioning and sharding in a distributed system?

- a. To divide data into smaller, manageable parts for easier processing ⊘
- b. To ensure data consistency
- c. To store data in a single location
- d. To reduce the cost of hardware

Your answer is correct.

The correct answer is: To divide data into smaller, manageable parts for easier processing

Question 3

Correct

Mark 0.25 out of 0.25

What is the primary benefit of using edge computing in IoT systems?

- a. To store large amounts of data in a centralized cloud
- b. To perform complex computations in a centralized server
- c. To avoid using sensors and actuators
- ● d. To process data closer to where it is generated, reducing latency ✓

Your answer is correct.

The correct answer is: To process data closer to where it is generated, reducing latency

Question 4

Correct

Mark 0.25 out of 0.25

Which of the following is a key advantage of using Content Delivery Networks (CDNs) for video streaming platforms like Netflix and YouTube?

- a. Requires more centralized servers
- b. Decreases video quality for all users
- ● c. Reduces latency by serving content from edge servers closer to users ✓
- d. Increases the processing power needed at the server side

Your answer is correct.

The correct answer is: Reduces latency by serving content from edge servers closer to users

Question 5

Correct

Mark 0.25 out of 0.25

How does Netflix ensure smooth content delivery at scale?

- a. By using a single global database
- ● b. By implementing microservices and a Content Delivery Network (CDN) ✓
- c. By caching all videos locally on users' devices
- d. By deploying all services on a single server

Your answer is correct.

The correct answer is: By implementing microservices and a Content Delivery Network (CDN)

Question 6

Correct

Mark 0.25 out of 0.25

What is a key factor for triggering auto-scaling in cloud environments?

○ a.   Number of developers in the team

○ b.   Manual intervention by admins

○ c.   Time of day

◉ d.   System resource utilization (CPU, Memory, Network Traffic) ⊘

Your answer is correct.

The correct answer is: System resource utilization (CPU, Memory, Network Traffic)

Question 7

Correct

Mark 0.25 out of 0.25

Which of the following is a best practice for caching in a large-scale distributed system?

○ a.   Keeping all data cached indefinitely

◉ b.   Using cache expiration policies to remove stale data ⊘

○ c.   Avoiding cache invalidation

○ d.   Storing session data in a relational database

Your answer is correct.

The correct answer is: Using cache expiration policies to remove stale data

Question 8

Correct

Mark 0.25 out of 0.25

Which organizational approach best supports microservices development?

○ a.   Using a single release pipeline for all microservices

○ b.   A single team managing all services

○ c.   Relying on a centralized deployment process

◉ d.   Cross-functional teams owning independent services ⊘

Your answer is correct.

The correct answer is: Cross-functional teams owning independent services

Question 9

Correct

Mark 0.25 out of 0.25

What is the best way to handle sudden traffic spikes in a scalable application?

- ○ a. Keeping all requests queued indefinitely
- ○ b. Allowing unlimited concurrent requests without scaling
- ○ c. Reducing the number of servers
- ⊙ d. Implementing rate limiting and auto-scaling ✓

Your answer is correct.

The correct answer is: Implementing rate limiting and auto-scaling

Question 10

Correct

Mark 0.25 out of 0.25

Which of the following is a principle of scalability?

- ○ a. Ignoring potential failures
- ⊙ b. Load balancing ✓
- ○ c. Decreasing system capacity
- ○ d. Centralized architecture

Your answer is correct.

The correct answer is: Load balancing

Question 11

Correct

Mark 0.25 out of 0.25

How do microservices communicate with each other? (Best approach)

- ⊙ a. Using lightweight protocols like REST, gRPC, or messaging queues ✓
- ○ b. Through a single centralized application layer
- ○ c. Through direct memory calls
- ○ d. By sharing a common database schema

Your answer is correct.

The correct answer is: Using lightweight protocols like REST, gRPC, or messaging queues

Question 12

Correct

Mark 0.25 out of 0.25

Which virtualization technique allows multiple virtual machines to share the same physical hardware?

- ⦿ a. Hypervisor-based virtualization ✓
- ○ b. API Gateway
- ○ c. Containerization
- ○ d. Distributed caching

Your answer is correct.

The correct answer is: Hypervisor-based virtualization

Question 13

Correct

Mark 0.25 out of 0.25

What is the primary focus of scalability in system architecture?

- ○ a. Enhancing security features
- ○ b. Improving the aesthetic design of the system
- ⦿ c. Enabling the system to handle increasing load ✓
- ○ d. Reducing the system's operational costs

Your answer is correct.

The correct answer is: Enabling the system to handle increasing load

Question 14

Correct

Mark 0.25 out of 0.25

What is the primary goal of domain-driven decomposition?

- ○ a. Using a common database for all services
- ○ b. Structuring microservices based on technical constraints
- ⦿ c. Defining services according to business domains and bounded contexts ✓
- ○ d. Grouping unrelated functionalities into a single service

Your answer is correct.

The correct answer is: Defining services according to business domains and bounded contexts

Question 15

Correct

Mark 0.25 out of 0.25

In a CQRS (Command Query Responsibility Segregation) architecture, how are write and read operations handled?

- a. Data replication is not used
- ⦿ b. Write operations are separated from read operations to optimize performance ✓
- c. Every operation is processed synchronously for consistency
- d. They are processed by the same database for consistency

Your answer is correct.

The correct answer is: Write operations are separated from read operations to optimize performance

Question 16

Correct

Mark 0.25 out of 0.25

What is the primary advantage of asynchronous communication in microservices?

- ⦿ a. It reduces service dependency and improves system resilience ✓
- b. It eliminates the need for a message broker
- c. It ensures immediate consistency in data
- d. It increases API response times

Your answer is correct.

The correct answer is: It reduces service dependency and improves system resilience

Question 17

Correct

Mark 0.25 out of 0.25

Which of the following is NOT one of the core components of the "CAP Theorem" (Consistency, Availability, Partition Tolerance)?

- a. Availability
- b. Consistency
- ⦿ c. Performance ✓
- d. Partition Tolerance

Your answer is correct.

The correct answer is: Performance

Question 18

Correct

Mark 0.25 out of 0.25

In real-time analytics, which of the following is a key example of its application?

- ○ a.   Web page ranking algorithms
- ○ b.   Video streaming optimization
- ○ c.   Database management for data retrieval
- ⦿ d.   Credit card fraud detection by analyzing transaction patterns in real time ✓

Your answer is correct.

The correct answer is: Credit card fraud detection by analyzing transaction patterns in real time

Question 19

Correct

Mark 0.25 out of 0.25

Which of the following is a common challenge for scalability in systems?

- ○ a.   Maintaining a static user base
- ○ b.   Reducing the number of users
- ⦿ c.   Efficiently managing sudden surges in traffic ✓
- ○ d.   Keeping all components centralized

Your answer is correct.

The correct answer is: Efficiently managing sudden surges in traffic

Question 20

Correct

Mark 0.25 out of 0.25

Which of the following is an advantage of serverless computing?

- ○ a.   Eliminates the need for any backend code
- ○ b.   Reduces API response time in all cases
- ⦿ c.   Automatically scales based on demand ✓
- ○ d.   Requires dedicated servers for each application

Your answer is correct.

The correct answer is: Automatically scales based on demand

← **Previous**
Old Question Paper

Next →
Quiz 2