

## Instructions

1. Create a file named {yourId}.csv:
  - Each line should have questionId, your choice.
  - Accepted choices values are 1-4.
2. Create a file names {yourid}.txt to answer the STC question
3. Ensure you **submit both files** upon finishing the exam

## Questions

1 : If you are building a social media app which requires fetching real-time data, what are some architecture types and frameworks that you can use to improve your app functionality?

1. Async/await, local database.
2. Cloud function, rest API.
3. Pub/sub, event-driven.
4. Second and third answer.

2 : Which one of the following can be considered as the primary data store of Kubernetes?

1. pod
2. node
3. etcd
4. service

3 : Which theorem states that two properties must exist among three in a distributed system?

1. Sharding
2. PACELC theorem
3. Cap Theorem
4. Auto-scaling

4 : What are some technologies commonly used to implement microservices?

1. Docker
2. Kubernetes
3. All of the above
4. None of the above

5 : Which of the following is a software architecture

1. Proxy Pattern
2. Observer Pattern
3. Singleton Pattern
4. Serverless

6 : Circuit breaker is used to

1. Prevent a failing service from cascading to other services
2. To Detect slow and failing
3. Represents a request or response, tags and timestamp
4. Hide internal endpoints of services

7 : Circuit breaker is a ?

1. Design pattern
2. Networking
3. Communication
4. Spreadsheet

8 : Which of the following is not an advantage of using microservices

1. High maintainance
2. Easy Upgrades
3. Less Network calls
4. None

9 : Which of the following is a distributed tracing tool?

1. Zipkin
2. Istio
3. Consul
4. Eureka

10 : Microservice could be considered as subset of

1. JAVA
2. POA
3. Cloud
4. SOA

11 : What is CQRS

1. Its Command query responsibility segregation
2. Used when system has reads are more than writes
3. When you want to track every single activity
4. All of the above

12 : Apache Cassandra is a massively scalable open source \_\_\_\_\_ database.

1. SQL
2. NoSQL
3. NewSQL
4. PISQL

13 : What are the core features of reactive programming?

1. Non-blocking
2. Event-driven
3. Asynchronous
4. All of the above

14 : Which device is used to distribute traffic to an application?

1. A Load Balancer
2. A Service Bus
3. A Circuit Breaker
4. Kubernetes

15 : Which of the following is a way for microservices to communicate

1. RPC

2. REST
3. JMS
4. All

16 : Single point failure examples is

1. Monolithic
2. Microservice
3. both of the above
4. none

17 : Things that are needed to highly consider in Distributed System

1. Discovery and Communication
2. Configuration management
3. Deployment
4. All of the above

18 : In a microservice application what is the single point of entry?

1. Service Mesh
2. API Gateway
3. Side Car
4. Service Bus

19 : Istio is used for ..... design pattern.

1. CQRS
2. Saga
3. Service Mesh
4. None of the above

20 : What are the properties of the CAP theorem?

1. Consistency
2. Availability
3. Partition Tolerance
4. All of the above

21 : To have a reactive programming system it should be?

1. Asynchronous
2. Event driven
3. Non-blocking
4. All of the above

22 : Fallacies of Distributed computing

1. Latency is zero
2. Topology remain same
3. Network is insecure
4. 1 and 2

23 : We want to manage, build and deploy many microservices, which is most suitable

1. virtual machines
2. Containerization platform

3. Single physical machine
4. Linux Operating System

24 : Which is not true for API Gateway

1. Single endpoint
2. Works as a router
3. Exposes internal service
4. Filter internal services

25 : What does the term "Asynchronous" refer to?

1. Events/objects that do interact within the same system but do not occur at predetermined intervals and do not necessarily rely on each other's existence to function.
2. Events and processes that occur simultaneously or have dependencies relating to time or another event that relies on time.
3. A programming paradigm where programs are constructed by applying and composing functions.
4. First and third answer.

26 : The markup language used to write Docker configuration files is

1. JSON
2. YAML
3. XML
4. HTML

27 : Potential cascade of failure of one service to other services through out the application can be handled using

1. Circuit Breaker
2. Service mesh
3. An application gateway
4. Side car

28 : How many layers in OSI?

1. 6
2. 4
3. 7
4. 8

29 : One of the following is NOT a goal in reactive manifesto

1. Message driven
2. Resilience
3. Dockerization
4. Elasticity

30 : Which is the key feature of Consul?

1. Health checking
2. Service discovery
3. Multi datacenter
4. All of the above

31 : What is the mechanism we use to tell the producers to produce at a slower pace when the consumer can't catchup

1. Back Pressure
2. Service Mesh
3. Consoul
4. None

32 : What tool can we use for distributed tracing?

1. Zookeeper
2. Zipkin
3. Eureka
4. Consul

33 : Which of the following are the main architectural styles for APIs

1. REST
2. GraphQL
3. RPC
4. All of the above

34 : CAP theorem states that a distributed database system has to make a tradeoff between

1. Consistency & probability & Availability
2. Consistency and Availability when a Partition occurs
3. Consistency, Attainability & Probability
4. None

35 : When would developers use microservices?

1. When they want to write cell phone applications that run quickly
2. When they work with ephemeral nano technology
3. When they need to create large, enterprise-level applications that are subject to changes on a frequent basis
4. When they create applications specifically for scientific test equipment

36 : which of the the 7 OSI model responbile for end to end connections?

1. Session
2. Application
3. Transport
4. Network

37 : The markup language used to write Docker configuration files is

1. XML
2. JSON
3. HTML
4. YAML

38 : Kafka maintains feeds of messages in categories called

1. Chunks
2. Domains
3. Messages
4. Topics

39 : What does The Kano Model suggest?

1. Over time delightful innovations of now becomes another basic need for the future.
2. Every single year the amount of transistors in a processor and processing power will double.
3. If something can go wrong it will.
4. Any piece of software reflects the organizational structure that produced it.

40 : Which of the following is concerned about distribution of traffic flows?

1. Service Discovery
2. Load Balancing
3. Circuit breaker
4. All

41 : to have a reactive programming system it should be?

1. Asynchronous
2. Event-driven
3. Non-blocking
4. All of above

42 : What is Istio?

1. Container orchestration system
2. A service mesh implementation
3. A security platform for microservices
4. All of the above

43 : Where would an RPC pattern API fit over a REST API?

1. CRUD Operations
2. Serving dynamic webpage data
3. Running a batch command on a server
4. Validating a login

44 : Which of the following is centralized repository populated with information about various services.

1. Service registry
2. Domain registry
3. Service discovery
4. Domain discovery

45 : Disadvantages of monolithic application includes

1. fixing bugs and implementing new features correctly becomes difficult and time consuming
2. Longer start-up time
3. Reliability problem
4. All of above

46 : Reactive Programming should be

1. Blocking
2. High footprint
3. Asynchronous
4. High memory

47 : What is Kubernetes

1. It's platform as a service (PaaS) products that use OS-level virtualization to deliver software in

packages

2. It's a scheduling tool for Docker containers
3. is an open-source container orchestration system for automating software deployment, scaling, and management
4. none of above

48 : Reactive Apps are

1. Responsive
2. Resilient
3. Elastic and Message Driven
4. All of the above

**[In a separate yourid.txt file]** Briefly explain how the concepts you learned from STC are manifested in the course ?