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Started on	Wednesday, 12 January 2022, 6:35 PM
State	Finished
Completed on	Wednesday, 12 January 2022, 6:54 PM
Time taken	18 mins 49 secs
Marks	7.00/10.00
Grade	7.00 out of 10.00 (70%)

Question 1

Partially correct

Mark 0.20 out of 0.40

In a cloud environment horizontal scaling means that:

- ☐ it modifies existing VMs
- ☐ it is compatible with any application architecture
- ☐ it requires load balancers
- ☒ it can scale infinitely



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

it can scale infinitely,

it requires load balancers

Question 2

Correct

Mark 0.40 out of 0.40

Which of the following represent HTTP safe methods?

- ☐ POST
- ☐ PATCH
- ☒ GET
- ☒ HEAD



Your answer is correct.

The correct answers are:

GET,

HEAD

Question 3

Correct

Mark 0.40 out of 0.40

Why is loose coupling beneficial?

- ☒ Facilitates better maintainability and extensibility
- ☐ Improves network performance
- ☐ Usually makes the system more scalable
- ☐ We should prefer strong coupling instead



Your answer is correct.

The correct answer is:

Facilitates better maintainability and extensibility

Question 4

Correct

Mark 0.40 out of 0.40

Which of the following characteristics is improved by designing and building applications in cloud environments?

- ☐ Control
- ☒ Availability
- ☒ Scalability
- ☒ Security



Your answer is correct.

The correct answers are: Scalability,

Security,

Availability

Question 5

Correct

Mark 0.40 out of 0.40

The 12 Factor App is a(n)

- ☐ Framework for building microservices
- ☐ Authentication application
- ☒ Methodology for building scalable and maintainable software



Your answer is correct.

The correct answer is:

Methodology for building scalable and maintainable software

Question 6

Partially correct

Mark 0.10 out of 0.40

Which of the following are protocols used by the internet?

- ☐ OSPF
- ☐ BGP
- ☒ IP
- ☐ RIP



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

IP,

BGP,

RIP,

OSPF

Question 7

Partially correct

Mark 0.27 out of 0.40

Which are some common triggers for serverless functions?

- ☐ HTTP
- ☒ Emails
- ☒ Queue messages
- ☒ File uploads to serverless storage

✗

✓

✓

Your answer is partially correct.

You have correctly selected 2.

The correct answers are:

File uploads to serverless storage,

Queue messages,

HTTP

Question 8

Correct

Mark 0.40 out of 0.40

OpenID Connect is a(n):

- ☐ SSO protocol
- ☐ Inter-service communication protocol
- ☐ Authorization protocol built on top of OAuth 2.0
- ☒ Authentication protocol built on top of OAuth 2.0

✓

Your answer is correct.

The correct answer is:

Authentication protocol built on top of OAuth 2.0

Question **9**

Correct

Mark 0.40 out of 0.40

Monitoring of the virtual host is useful to ensure:

- ☐ knowing your current price to pay
- ☒ if provider respects contracts (SLA)
- ☐ knowing the size of the database
- ☒ knowing when to scale (up/down, in/out)



Your answer is correct.

The correct answers are:

if provider respects contracts (SLA),
knowing when to scale (up/down, in/out)

Question **10**

Correct

Mark 0.40 out of 0.40

FaaS stands for:

- ☒ Functions as a service
- ☐ Functionality as a service
- ☐ Frontend as a service



Your answer is correct.

The correct answer is:

Functions as a service

Question **11**

Partially correct

Mark 0.20 out of 0.40

Cloud network security can be enforced by:

- ☒ network access control lists
- ☒ gateways
- ☐ domain name servers
- ☒ firewalls



Your answer is partially correct.

You have selected too many options.

The correct answers are:

firewalls,

network access control lists

Question **12**

Partially correct

Mark 0.20 out of 0.40

When can a service be considered serverless?

- ☒ When you don't have to provision capacity
- ☐ When the service can scale down to 0
- ☒ When you don't have to setup any infrastructure
- ☐ When you pay only for what you use



Your answer is partially correct.

You have correctly selected 2.

The correct answers are:

When you don't have to setup any infrastructure,

When you don't have to provision capacity,

When you pay only for what you use,

When the service can scale down to 0

Question **13**

Partially correct

Mark 0.30 out of 0.40

In a cloud environment the role of a load balancer is to:

- ☐ A/B testing
- ☒ balance traffic across multiple targets
- ☒ monitor the health of target resources
- ☒ serve as a single point of entry



Your answer is partially correct.

You have correctly selected 3.

The correct answers are:

balance traffic across multiple targets,

monitor the health of target resources,

serve as a single point of entry,

A/B testing

Question **14**

Correct

Mark 0.40 out of 0.40

Which of the following is the availability formula used in cloud environments?

- ☐ $\text{availability} = \text{uptime} / (\text{uptime} + \text{downtime})$
- ☐ $\text{availability} = \text{uptime} / \text{downtime}$
- ☒ $\text{availability} = \text{uptime} / (\text{downtime} + \text{uptime})$
- ☐ $\text{availability} = \text{uptime} / (\text{downtime} + \text{uptime})$



Your answer is correct.

The correct answer is:

$\text{availability} = \text{uptime} / (\text{downtime} + \text{uptime})$

Question **15**

Correct

Mark 0.40 out of 0.40

Which of the following is not an Integration Service for cloud?

- ☐ queues
- ☒ shared memory
- ☐ publish/subscribe services
- ☐ workflow services
- ☐ API Gateways



Your answer is correct.

The correct answer is:

shared memory

Question **16**

Incorrect

Mark 0.00 out of 0.40

Which of the following approaches has the ideal coupling?

- ☐ Separated services communicating through a message queue
- ☐ Separated services communicating through REST interfaces
- ☐ Services deployed together as a monolith
- ☒ Separated services communicating through RPC



Your answer is incorrect.

The correct answer is:

Separated services communicating through a message queue

Question **17**

Partially correct

Mark 0.27 out of 0.40

Which of the following represent possible type of consistency in cloud database models?

- ☐ no consistency
- ☒ strong consistency
- ☒ eventual consistency
- ☐ tunable consistency



Your answer is partially correct.

You have correctly selected 2.

The correct answers are:

strong consistency,

eventual consistency,

tunable consistency

Question **18**

Correct

Mark 0.40 out of 0.40

Which of the following is not an application security process/technique?

- ☐ input validation
- ☐ encryption
- ☐ authentication
- ☐ authorization
- ☒ runtime checking



Your answer is correct.

The correct answer is:

runtime checking

Question **19**

Correct

Mark 0.40 out of 0.40

Which are two effective measures to improve infrastructure security?

- ☐ Implement OAuth 2.0
- ☒ Reduce the attack surface as much as possible
- ☐ MFA for the users
- ☒ MFA for the development team



Your answer is correct.

The correct answers are:

MFA for the development team,

Reduce the attack surface as much as possible

Question **20**

Partially correct

Mark 0.27 out of 0.40

Which of the following represent types of load balancers?

- ☒ HTTP
- ☒ DNS
- ☒ TCP/UDP
- ☒ NAT



Your answer is partially correct.

You have selected too many options.

The correct answers are:

HTTP,

TCP/UDP,

DNS

Question **21**

Partially correct

Mark 0.20 out of 0.40

Which is true for a graph database model?

- ☐ nodes contain properties (key-value pairs)
- ☒ contains nodes and relationships
- ☐ relationships are not directed
- ☐ relationships can't contain properties



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

contains nodes and relationships,

nodes contain properties (key-value pairs)

Question **22**

Partially correct

Mark 0.20 out of 0.40

What are Docker volumes good for?

- ☐ allow us to control network isolation separately
- ☒ a way to persist data separate of the container's lifecycle
- ☐ needed since containers are ephemeral and isolated
- ☐ enable communication between multiple containers



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

needed since containers are ephemeral and isolated,

a way to persist data separate of the container's lifecycle

Question **23**

Partially correct

Mark 0.20 out of 0.40

Asymmetric encryption is suited for:

- ☐ High-performance compute
- ☒ Digital signatures (identity verification)
- ☐ Small payloads
- ☐ Large payloads



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

Small payloads,

Digital signatures (identity verification)

Question **24**

Incorrect

Mark 0.00 out of 0.40

Which is the optimal approach for the least privilege principle when admin rights are required?

- ☐ Leverage features that enable just-in-time privileges
- ☐ Enable MFA
- ☐ Relax the security policies when needed
- ☒ Create a dedicated admin user used only when needed



Your answer is incorrect.

The correct answer is:

Leverage features that enable just-in-time privileges

Question **25**

Partially correct

Mark 0.20 out of 0.40

Why are serverless databases usually NoSQL?

- ☐ Because NoSQL databases are simpler (e.g. no ACID)
- ☒ Because NoSQL databases usually scale better
- ☐ Due to licensing limitations of SQL databases
- ☐ Because data is non-relational in most cases anyway



Your answer is partially correct.

You have correctly selected 1.

The correct answers are:

Because NoSQL databases usually scale better, Because NoSQL databases are simpler (e.g. no ACID)

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