⚠ **This quiz has been regraded; your new score reflects 2 questions that were affected.**

CMPE 281 - MIDTERM FALL 17 (PART 1)

Due Oct 14 at 10am   **Points** 50   **Questions** 35
Available until Oct 14 at 10am   **Time Limit** 30 Minutes
Requires Respondus LockDown Browser

Instructions

CMPE 281 - MIDTERM (PART 1)
Multiple Choice / Short Answer Questions

- You have **30 minutes** on this part of the exam
- This part of the exam is worth **50 points**
- This is a closed book, closed notes exam
- Close all documents, programs and windows on your computer
- The only allowed window should be this Canvas window
- Make sure the Canvas Lockdown Browser window is maximized
- Any violations of this will result in an immediate ZERO score on this exam
- Questions will be presented one-at-a-time and your answers will be locked once submitted
- You may not return to your answers to change them, so make sure allow for enough time on each question

This quiz was locked Oct 14 at 10am.

Attempt History

	Attempt	Time	Score	Regraded
LATEST	[Attempt 1](#)	17 minutes	43.13 out of 50	42.63 out of 50

Score for this quiz: **42.63** out of 50
Submitted Oct 14 at 9:39am
This attempt took 17 minutes.

Question 1	1 / 1 pts

Your web application needs credentials and authorization to read/write a Amazon DynamoDB table and a Amazon S3 bucket. What AWS service would you use?

   ☐   CloudFormation

Correct!   ☑   AWS IAM
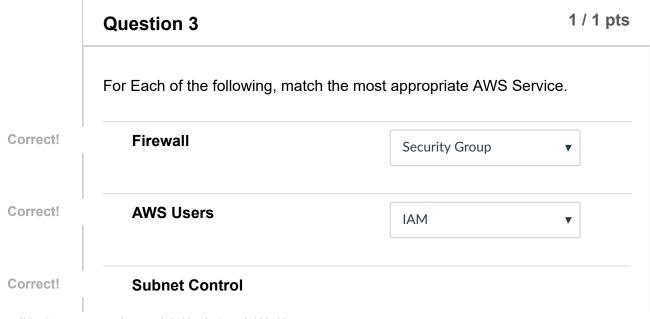
   ☐   Elastic Beanstalk

Question 2   1 / 1 pts

What would you do if you need to allow your web servers to access your application servers on port 8080?

Correct!   ☑   Modify EC2 Security Group

   ☐   Modify EC2 Instance

   ☐   Modify EC2 Network Interface

Question 3   1 / 1 pts

For Each of the following, match the most appropriate AWS Service.

Correct!   **Firewall** | Security Group   ▼ |

Correct!   **AWS Users** | IAM   ▼ |

Correct!   **Subnet Control**

	VPC ▾

Correct!

Server	EC2 ▾

Correct!

DNS	Route 53 ▾

Other Incorrect Match Options:
- SQS
- SWF
- ELB
- Elastic DNS

Question 4   1 / 1 pts

In the AWS "Shared Responsibility Model":

- ***Application User's Identity and Access Management***

Is the Responsibility of?

Correct!

◉   AWS Tenant
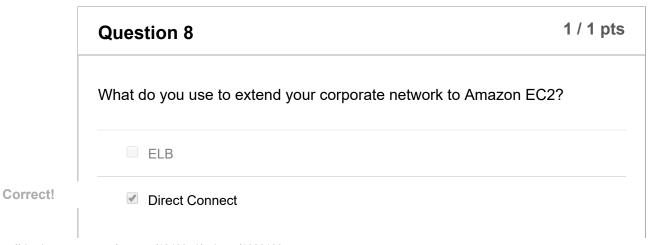
○   AWS

Question 5   1 / 1 pts

AWS Security Groups can define egress and ingress traffic from/to Virtual Servers inside a VPC.

Correct!

◉   True

○   False

Question 6

1 / 1 pts

If you have more than one server, which feature will help achieve high availability?

Correct!

☑ Multiple AZs

☐ AWS Free Tier

☐ Elastic IPs

Question 7

1 / 1 pts

What service provides scalable load balancing for your applications's public-facing web servers or private application servers?

Correct!

☑ ELB

☐ Direct Connect

☐ VPC

Question 8

1 / 1 pts

What do you use to extend your corporate network to Amazon EC2?

☐ ELB

Correct!

☑ Direct Connect

☐ VPN

Question 9   1 / 1 pts

In the AWS "Shared Responsibility Model":

- ***Network***

Is the Responsibility of?

○ AWS Tenant

Correct!

◉ AWS

Question 10   Original Score: 1 / 1 pts Regraded Score: 0.5 / 1 pts

⚠ **This question has been regraded.**

Where can you find AWS Products and Services?

☐ Only via API

Correct!

☑ On the AWS Management Console

orrect Answer

☐ Service Catalog

Question 11   2 / 2 pts

A Method of Load Balancing where New Servers don't get Overloaded on Startup.

    ○ Round-Robin

    ○ Weighted Round-Robin

    ○ Least Load

Correct!   ◉ Least Load with Slow Start

    ○ Least Load with Connection Draining

    ○ Least Load with Fast Start

Question 12   2 / 2 pts

In the MSDN Paper, the Three Approaches to Managing Multi-Tenant Data Discussed were:

    ○ Scalable, Configurable and Multi-Tenant-Efficient

    ○ Separated Database, Separate Schema and Shared Schema

    ○ Preallocated Fields, Name-Value Pairs, Custom Columns

Correct!   ◉

Dedicated, Shared with Fixed Extension Set, Shared with Custom Extensions

    ○ None of these

Question 13   2 / 2 pts

Which of the following is NOT a Business Driver for adopting Cloud Computing?

○ Low Captial Investment

○ Business Agility

○ Time to Market with new Services

Correct!   ⦿ Data Security & Compliance

○ All of these are Business Drivers

Question 14

0.67 / 2 pts

Which of the following were reasons why migrating an application to the Cloud would be difficult. (Check all that apply)

Correct!   ☑ Legacy Apps where not built expecting auto scale

You Answered   ☑ Legacy Apps typically are not multi-tenant

Correct!   ☑

Legacy Apps were not designed to be service-oriented and loosely-coupled

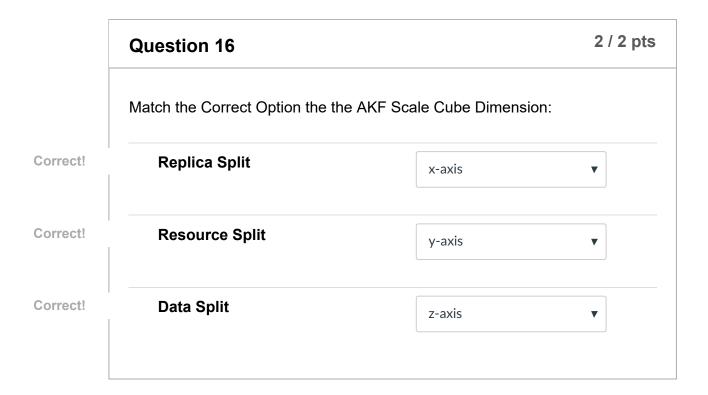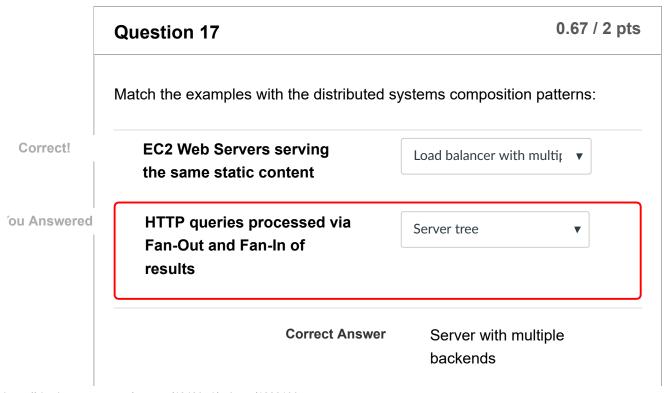orrect Answer   ☐ Legacy Apps are often stateful and not scalable on the Cloud

Question 15

2 / 2 pts

Which of the following is also informally known as the "Poor Man's Multi-tenancy"?

○ A Shared "Single" Instance Model

Correct!   ⦿ A VM on top of Shared HW & OS

⚪   Dedicated Hardware and Software

⚪   VMs with a shared middleware

⚪   None of these

Question 16   2 / 2 pts

Match the Correct Option the the AKF Scale Cube Dimension:

Correct!   **Replica Split**

x-axis ▼

Correct!   **Resource Split**

y-axis ▼

Correct!   **Data Split**

z-axis ▼

Question 17   0.67 / 2 pts

Match the examples with the distributed systems composition patterns:

Correct!   **EC2 Web Servers serving the same static content**

Load balancer with multip ▼

ou Answered   **HTTP queries processed via Fan-Out and Fan-In of results**

Server tree ▼

Correct Answer   Server with multiple backends

ou Answered

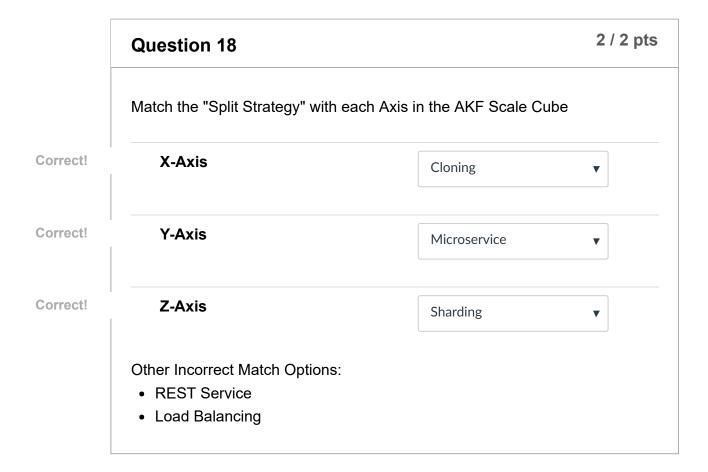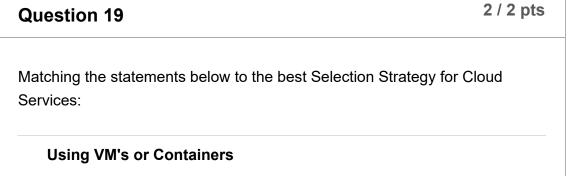**Terabyte datasets processed by servers in shards**

Server with multiple back ▼

Correct Answer   Server tree

Other Incorrect Match Options:
- Microservices splits
- Stateless replicated middleware servers

Question 18   2 / 2 pts

Match the "Split Strategy" with each Axis in the AKF Scale Cube

Correct!   **X-Axis**   Cloning   ▼

Correct!   **Y-Axis**   Microservice   ▼

Correct!   **Z-Axis**   Sharding   ▼

Other Incorrect Match Options:
- REST Service
- Load Balancing

Question 19   2 / 2 pts

Matching the statements below to the best Selection Strategy for Cloud Services:

Correct!   **Using VM's or Containers**

| Default to Virtual | ▼ |

Correct!

Outsource Infrastructure | Leverage Provider Expert | ▼ |

Correct!

Short Term / Temporary Use | Ephemeral Computing | ▼ |

Correct!

Compare Public vs. Private | Cost Based | ▼ |

Other Incorrect Match Options:
- Contract for On-Premise
- Overflow to Cloud
- Quick Time to Market
- Bare Metal Cloud
- Security Requirements

Question 20   2 / 2 pts

NIST Defines how many different deployment models?

- ○ 5

Correct!

- ◉ 4

- ○ 3

- ○ 2

- ○ 1

Question 21   1 / 1 pts

The "FROM" directive below in a Dockerfile tells Docker to build an image based on the "**openjdk**" image.

FROM openjdk
CMD ["java", "-version"]

Correct!

   ◉ True

   ○ False

Question 22   1 / 1 pts

Docker Hub is a Repository for Sharing Docker Images

Correct!

   ◉ True

   ○ False

Question 23   Original Score: 1 / 1 pts Regraded Score: 1 / 1 pts

> ⚠ **This question has been regraded.**

The "CMD" below in a Dockerfile tells Docker to install the latest version of Java JDK.

FROM openjdk
CMD ["java", "-version"]

   ○ True

Correct!

   ◉ False

Question 24

1 / 1 pts

To build a Docker image, the following is needed:

☐ Makefile

☐ Gradle Build

Correct!

☑ Dockerfile

☐ Docker Run Command

Question 25

1 / 1 pts

Docker Cloud can link to GitHub to Build Docker Images.

◉ True

Correct!

○ False

Question 26

1 / 1 pts

Event Sourcing stores "Facts" and not "State". State is derived from the set of "Facts".

◉ True

Correct!

○ False

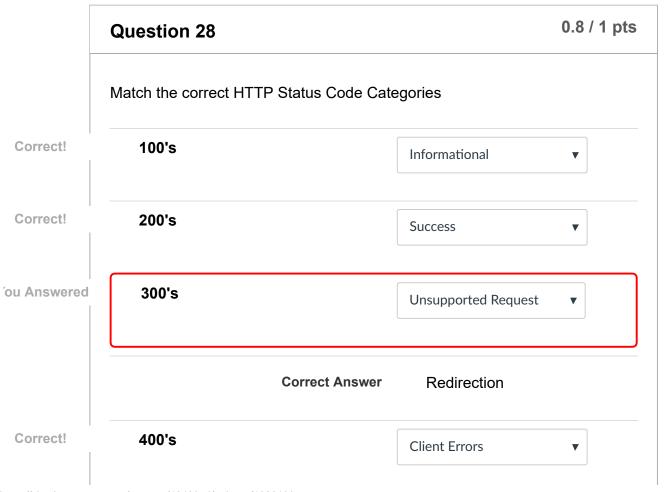## Question 27   1 / 1 pts

**The following REST API is consider what type of API according to
Richardson's API Maturity Model?**

FORMAT: 1A
HOST: http://restbucksapi.apiblueprint.org/

RestBucks API

Example from REST in Practice Book

Orders [/order]

Get All Orders [GET]

+ Response 200 (application/json)

```
    [
      {
        "id" : 1
        "location": "takeAway",
        "items" : [
          "item": {
            "name : "latte",
            "quantity" : 1,
            "milk" : "whole",
            "size" : "small"
          }
        ],
        "status" : "pending"
      }
    ]
```

Create a New Order [POST]

+ Request (application/json)

```
    {
      "location": "takeAway",
      "item": {
```

```
                "name : "latte",
                "quantity" : 1,
                "milk" : "whole",
                "size" : "small"
            }
        }

+ Response 201 (application/json)

    + Headers

            Location: /order/1

    + Body

            {
                "id" : 1,
                "location": "takeAway",
                "items" : [
                    "item": {
                        "name : "latte",
                        "quantity" : 1,
                        "milk" : "whole",
                        "size" : "small"
                    }
                ],
                "status" : "pending"
            }

## Order [/order/{id}]

### Get Order by ID [GET]

+ Response 200 (application/json)

    + Attributes (object)
        + id: 1 (number)

    + Body

            {
                "id" : 1,
```

```
              "location": "takeAway",
              "items" : [
                "item": {
                    "name : "latte",
                    "quantity" : 1,
                    "milk" : "whole",
                    "size" : "small"
                }
              ],
              "status" : "pending"
          }
```

Update Order by ID [PUT]

+ Request (application/json)

```
        {
            "location": "takeAway",
            "item": {
                "name : "cappuccino",
                "quantity" : 1,
                "milk" : "skim",
                "size" : "large"
            }
        }
```

+ Response 200 (application/json)

  + Attributes (object)
      + id: 1 (number)

  + Body

```
        {
            "id" : 1
            "location": "takeAway",
            "items" : [
                "item": {
                    "name : "cappuccino",
                    "quantity" : 1,
                    "milk" : "skim",
```

```
                "size" : "large"
              }
           ],
           "status" : "preparing"
        }
```

Delete Order by ID [DELETE]

+ Response 204 (application/json)

   ○ Hypermedia

Correct!   ◉ CRUD API

   ○ SOAP API

   ○ Richardson Level 0

Question 28	0.8 / 1 pts

Match the correct HTTP Status Code Categories

Correct!	**100's**	Informational ▼
Correct!	**200's**	Success ▼
ou Answered	**300's**	Unsupported Request ▼
	Correct Answer	Redirection
Correct!	**400's**	Client Errors ▼

Correct!   **500's** | Server Errors   ▼ |

Other Incorrect Match Options:

- Unsupported Request
- Network Errors
- Server Unavailable
- Server Too Busy

Question 29   1 / 1 pts

Select the **Six** Constraints for the REST Architecture Style defined by Roy Fielding:

Correct!   ☑ Uniform Interface

                     ☐ Sticky Sessions

Correct!   ☑ Separation of Concerns

Correct!   ☑ Statelessness

                     ☐ Idempotent

Correct!   ☑ Cacheable

                     ☐ Distributed

Correct!   ☑ Layered System

Correct!   ☑ Code on Demand

Question 30   1 / 1 pts

CQRS stands for: Command Query REST Service

○ True

Correct!   ◉ False

Question 31   0 / 2 pts

Every Go program is made up of packages.

orrect Answer   ○ True

ou Answered   ┌───┐
                │ ◉ False   │
                └───┘

Question 32   2 / 2 pts

Go has two types of loops:

1) For Loops

2) Until Loops

○ True

Correct!   ◉ False

Question 33   0 / 2 pts

The "i := 1" declares a variable similar to "var a int" below and is valid Go syntax

```
package main

import "fmt"

i := 1

func main() {
    var a int
    fmt.Println(a)
}
```

You Answered

⊙ True

○ False

Question 34

2 / 2 pts

Exported functions in Go Packages are named with a beginning lowercase letter.

○ True

Correct!

⊙ False

Question 35

2 / 2 pts

Variables declared without an explicit initial value are given their *zero value*. Match the zero values for the following:

Correct!

Numeric Types

0 ▼

Correct!   **Boolean Types** | false   ▼ |

Correct!   **String Types** | ""   ▼ |

Other Incorrect Match Options:

- Null Pointer
- true
- -1

Quiz Score: **42.63** out of 50