1. Which information is needed to create a virtual private cloud (VPC)? **1 / 1 point**

- (●) The AWS Region that the VPC will reside in.
- ( ) The group of subnets that the VPC will reside in.
- ( ) The subnet that the VPC will reside in.
- ( ) The Availability Zone that the VPC will reside in.

Correct
When a solutions architect creates a VPC, they need to specify the AWS Region that it will reside in, the IP range for the VPC, and the name of the VPC. For more information, see the *Introduction to Amazon VPC* video.

2. Which of the following can a route table be attached to? **1 / 1 point**

- ( ) AWS Accounts
- ( ) Availability Zone
- (●) Subnets
- ( ) Regions

Correct
Route tables can be attached to virtual private clouds (VPCs) and subnets. For more information, see the *Amazon VPC Routing* video.

3. A company wants to allow resources in a public subnet to communicate with the internet. Which of the following must the company do to meet this requirement? **1 / 1 point**

- ( ) Create a route to a private subnet
- ( ) Attach an internet gateway to their VPC
- ( ) Create a route in a route table to the internet gateway
- ( ) A and B

- [x] B and C

Correct

Unlike a modem at home, which can go down or go offline, an internet gateway is highly available and scalable. After the company creates an internet gateway, they then need to attach it to a virtual private cloud (VPC) and create a route table to route network traffic through the internet gateway. For more information, see the *Introduction to Amazon VPC* reading.

4. What is the compute as a service (CaaS) model? **1 / 1 point**

- [ ] The CaaS model requires that users purchase virtual machines and manually provision servers to run a workload.
- [x] The CaaS model offers computing resources (such as virtual machines that run on servers in data centers) on demand, by using virtual services.
- [ ] The CaaS model offers large discounts for computing resources. However, users must run the workload from the server that is stored on-premises.
- [ ] The CaaS model delivers cloud-based applications to users across the globe, over the internet.

Correct

The CaaS model provides virtual computing resources on demand. For more information, see the *Compute as a Service on AWS* video.

5. Which statement about the default settings of a security group is TRUE? **1 / 1 point**

- [ ] Allows all inbound traffic and blocks all outbound traffic by default.
- [x] Blocks all inbound traffic and allows all outbound traffic by default.
- [ ] Allows all inbound and outbound traffic by default.
- [ ] Blocks all inbound and outbound traffic by default.

Correct

Security groups control the traffic that is allowed to reach and leave the resources that are associated with the security group. By default, security groups block all incoming traffic, and allow outbound traffic. For more information, see the *Secure Your Network with Amazon VPC Security* video.

6. What does an Amazon Elastic Compute Cloud (Amazon EC2) instance type indicate? **1 / 1 point**

- ○ Instance Amazon Machine Image (AMI) and networking speed
- ○ Instance tenancy and instance billing
- ○ Instance placement and instance size
- ◉ Instance family and instance size

✓ **Correct**

Instance types are named based on instance generation, family, additional capabilities, and size. For more information, see the *Introduction to Amazon EC2* video.

7. What is the relationship between Amazon Machine Images (AMIs) and Amazon Elastic Compute Cloud (Amazon EC2) instances? **0 / 1 point**

- ◉ When launching an EC2 instance, the first setting that users configure is the operating system (OS) that they want. Then, they select an AMI and manually install the OS, drives, and installation wizard.
- ○ The AMI is a virtual server that hosts a workload, but the EC2 instance is a template that models and defines an instance. One advantage of using EC2 instances is that they are reusable.
- ○ An AMI is a template that contains the software that is required to launch an instance. EC2 instances are live instantiations of what is defined in an AMI, much like a cake is a live instantiation of a cake recipe.
- ○ An AMI is a collection of unique EC2 instances. Each time users create an EC2 instance, they must set up a new AMI template for their instance.

✗ **Incorrect**

In the AWS Cloud, OS installation is no longer the user's responsibility. Instead, the OS is built into the AMI that the user chooses. For more information about the correct answer to this question, see *Reading: Introduction to Amazon Elastic Compute Cloud*.

8. What is the difference between using AWS Fargate or Amazon Elastic Compute Cloud (Amazon EC2) as the compute platform for Amazon Elastic Container Service (Amazon ECS)? **1 / 1 point**

- (●) With AWS Fargate, AWS manages and provisions the underlying infrastructure for hosting containers.
- ( ) With Amazon ECS on Amazon EC2, users need to upload only the source code. Amazon ECS takes care of the rest.
- ( ) With AWS Fargate, users need to manage cluster capacity and scaling.
- ( ) With Amazon ECS on Amazon EC2, AWS manages and provisions the underlying EC2 instance for containers.

✓ **Correct**
With Fargate, users don't need to provision, configure, or scale clusters of virtual machines to run containers. For more information, see *Container Services on AWS*.

9. Which statement about serverless is TRUE? **1 / 1 point**

- ( ) Users must manage availability and fault tolerance.
- ( ) Users must provision and manage servers.
- ( ) Users must manually scale serverless resources.
- (●) Users do not pay for idle resources.

✓ **Correct**
Serverless architectures only incur a charge when they are in use and resources are being consumed. For more information, see the *What is Serverless* video.

10. True or False: AWS Lambda is always the best solution when running applications on AWS. **1 / 1 point**

- ○ True
- ◉ False

Correct
AWS Lambda is a good solution for running on-demand workloads with runtimes of under 15 minutes, without needing to provision and manage servers. However, it does not fit all use cases. For more information, see the *Choose the Right Compute Service* video.

11. Which compute service does Amazon Elastic Compute Cloud (Amazon EC2) provide? **1 / 1 point**

- ○ Container services
- ○ Serverless
- ◉ Virtual machines (VMs)
- ○ Analytics

Correct
Amazon EC2 is a web service that provides secure and resizable compute capacity in the cloud. For more information, see *Reading: Compute as a Service on AWS*.

12. Which stage of the instance lifecycle is an instance in when the account starts to accumulate charges? **1 / 1 point**

- ○ When an instance is in a pending stage
- ◉ When an instance is in a running stage
- ○ When an instance is stopped
- ○ When an instance is terminated

Correct

Users start accumulating charges for instance usage when their instance is running. For more information, see *Amazon EC2 Instance Lifecycle*.

13. Which component of the *c5.4xlarge* instance determines the instance family and generation number? **1 / 1 point**

- 4x
- Large
- 4xlarge
- c5 (selected)

Correct
The *c5* determines that this instance is a compute-optimized instance that belongs to the *C* family with the fifth-generation number. For more information, see *Reading: Amazon EC2 Instance Lifecycle*.

14. Which container runtime can be used to host a container on an Amazon Elastic Compute Cloud (Amazon EC2) instance? **1 / 1 point**

- Docker (selected)
- Container
- Amazon Simple Storage Service (Amazon S3)
- Amazon EC2

Correct
Docker is a software platform used to create, package, deploy, and run containers. For more information, see *Reading: Container Services on AWS*.

15. What is an example of an event that invokes an AWS Lambda function? **1 / 1 point**

- An AWS API call that is made by an AWS Identity and Access Management (IAM) role

- (selected) An upload of a file to the Amazon Simple Storage Service (Amazon S3) source bucket
- An incoming HTTP request to a website that is hosted on Amazon Elastic Compute Cloud (Amazon EC2)
- A simple WordPress website that has no API integration

Correct
An upload of a file to the S3 source bucket can invoke a Lambda function. For more information, see *Introduction to AWS Lambda*.

16. True or False: With serverless, users do not need to provision and manage servers. **1 / 1 point**

- (selected) True
- False

Correct
A serverless architecture is a way to build and run applications and services without needing to manage infrastructure. For more information, see *Reading: Serverless and AWS Lambda.*

17. True or False: All AWS services require users to configure a virtual private cloud (VPC). **1 / 1 point**

- True
- (selected) False

Correct
With serverless services, AWS does not require a VPC for networking purposes. For more information, see *Networking on AWS.*

18. An engineer is working with networks in the AWS Cloud. What should the engineer use to configure the size of their network? **1 / 1 point**

- (selected) Classless Inter-Domain Routing (CIDR) notation

- IPv6 notation
- IPv4 notation
- IP addresses

Correct

In AWS, users choose their network size by using CIDR notation. For more information, see *Reading: Networking on AWS*.

19. What is the difference between network access control lists *(*ACLs) and security groups? **1 / 1 point**

- By default, network ACLs allow incoming traffic and block outgoing traffic from a subnet. Users can change these settings to provide an additional layer of security. However, the default configurations of security groups block all traffic.
- By default, network ACLs block all traffic from a subnet. However, the default configurations of security groups allow all inbound and outbound traffic. Users can change these settings to provide an additional layer of security.
- By default, network ACLs block incoming traffic and allow outgoing traffic. The default configurations of security groups block all traffic. Users can change these settings when they configure networking for their instance.
- **By default, network ACLs allow incoming and outgoing traffic from a subnet. Users can change these settings to provide an additional layer of security. However, the default configurations of security groups block all inbound traffic and allow all outbound traffic.**

Correct

Network ACLs are considered stateless. By default, they allow all traffic in and out of the subnet. However, users can restrict data at the subnet level by including both the inbound and outbound ports that are used for the protocol. If users include the incoming port, but do not include the outbound range, their server would respond. However, the traffic would never leave the subnet. In contrast, security groups are stateful. The default configuration of a security group blocks all inbound traffic and allows all outbound traffic. If users open inbound ports, security groups

will remember if a connection is originally initiated by the Amazon Elastic Compute Cloud (Amazon EC2) instance or from the internet, and will allow all outbound traffic. For more information, see *Reading: Amazon VPC routing and security*.