Question 1:

A Developer at a company is working on a CloudFormation template to set up resources. Resources will be defined using code and provisioned based on conditions. Which section of a CloudFormation template does not allow for conditions?

A: **Parameters**

Reason:

Correct answer - "Parameters" : Conditions cannot be used within the parameters section. Please visit https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/parameters-section-structure.html for more information on the parameter structure.

Incorrect:

"Resources" - Associate conditions with the resources that you want to conditionally create

"Conditions" - You can define conditions in this section

"Outputs" - Associate conditions with the outputs that you want to conditionally create

For more information visit <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/conditions-section-structure.html>

GENERAL REQs of Parameters

* You can have a maximum of 60 parameters in an AWS CloudFormation template.
* Each parameter must be given a logical name (also called logical ID), which must be alphanumeric and unique among all logical names within the template.
* Each parameter must be assigned a parameter type that is supported by AWS CloudFormation. For more information, see [Type](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/parameters-section-structure.html#parameters-section-structure-properties-type).
* Each parameter must be assigned a value at runtime for AWS CloudFormation to successfully provision the stack. You can optionally specify a default value for AWS CloudFormation to use unless another value is provided.
* Parameters must be declared and referenced from within the same template. You can reference parameters from the Resources and Outputs sections of the template.

Cloudformation Parameters:

* An optional section to customize cloudformation templates
* Parameters enable you to input custom values to your template each time you create or update a stack

What are Parameters:

* Parameters are a way to provide inputs to your aws cloudformation template
* They’re important to know about if:
  + You want to reuse your templates across the company
  + Some inputs can not be determined ahead of time
* Parameters are extremely powerful, controlled, and can prevent errors from happening in your templates thanks to types

When should you use a parameter?

* Ask yourself this:
  + Is this Cloudformation resource configuration likely to change in the future?
  + If so, make it a parameter

Parameters Theory & Hands-On

* -- Parameters are really only good for when utilizing spinning up the stack from the AWS management console --
  + Otherwise there will be the inability to choose values in code deploy and pipeline
* Parameters can be controlled by all these settings:
  + Type:
    - String
    - Number
    - CommaDelimitedList
    - List<Type>
    - AWS Parameter (to help catch invalid values  – match against existing values in the AWS Account) -- DOCUMENTATION --
  + Description
  + Constraints
  + ConstraintDescription (string) -> An explanation of the constraints of the parameter
  + Min/Max Length (strings) -> usable only with strings
  + Min/Max Value (numbers) -> usable only with numbers
  + Defaults -> The default value of a given parameter
  + AllowedValues (array) -> an array of allowed values within an array
  + AllowedPattern (RegExp) -> A string has to match the given RegExp pattern
  + NoEcho (Boolean) -> No message given to the end user --Ideal for hiding security values--

Referencing Parameters: !Ref <Name Of Parameter>

How to Reference a parameter

* The Fn::Ref function can be leveraged to reference parameters
* Parameters can be used anywhere in a template
* The shorthand for this in YAML is !Ref
* The function can also reference other elements within the template

Question 4:

Which of the following best describes how KMS encryption works?

Correct answer - "**KMS encrypts and decrypts data using your master keys stored in KMS**" : These are known as customer master keys or CMKs. You can generate CMKs in KMS, in an AWS CloudHSM cluster, or import them from your own key management infrastructure.

Incorrect:

"KMS receives CMK from the client at every encrypt call, and encrypts the data with that" - You can import your own CMK (Customer Master Key) but it is done once and then you can encrypt/decrypt as needed

"KMS sends the CMK to the client, which performs the encryption and then deletes the CMK" - KMS does not send CMK to the client, KMS decrypts the data

"KMS generates a new CMK for each encrypt call and encrypts the data with it" - KMS does not generate a new key each time but you can have KMS rotate the keys for you. Best practices discourage extensive reuse of encryption keys so it is good practice to generate new keys

For more information visit <https://docs.aws.amazon.com/cli/latest/reference/kms/encrypt.html>

AWS CloudHSM :

AWS CloudHSM is a cloud-based hardware security module (HSM) that enables you to easily generate and use your own encryption keys on the AWS Cloud. With CloudHSM, you can manage your own encryption keys using FIPS 140-2 Level 3 validated HSMs. CloudHSM offers you the flexibility to integrate with your applications using industry-standard APIs, such as PKCS#11, Java Cryptography Extensions (JCE), and Microsoft CryptoNG (CNG) libraries.

CloudHSM is standards-compliant and enables you to export all of your keys to most other commercially-available HSMs, subject to your configurations. It is a fully-managed service that automates time-consuming administrative tasks for you, such as hardware provisioning, software patching, high-availability, and backups. CloudHSM also enables you to scale quickly by adding and removing HSM capacity on-demand, with no up-front costs.

Question 6:

A company is undergoing a compliance audit by the government. The company has hundreds of IAM users that make API calls but specifically it needs to be determined who is making KMS API calls. Which of the following services should the audit team use?

Explanation

Correct answer - "**CloudTrail**" :

With CloudTrail, you can log, continuously monitor, and retain account activity related to actions across your AWS infrastructure. It is a good tool for auditing and compliance purposes.

Incorrect:

"CloudWatch Metrics" - Its a monitor tool for example to monitor CPU usage of a particular EC2 instance

"X-Ray" - More appropriate for the application level as it helps with tracking requests made to your applications

"CloudWatch Alarms" - Used for watching a single CloudWatch metric and not API calls

For more information visit <https://aws.amazon.com/cloudtrail/>

The lesson to be learned from this question is that cloudtrail is much better to get a 1000 ft view of the whole process, whereas CloudWatch is really good at getting a microview of what is happening in the literal CPU/Terminal

Question 8:

You run a SAAS company for the healthcare industry that is used worldwide where users pay a monthly subscription. There have been requests by mobile developers to expose public API's created with API Gateway. You decide to make the API's available to mobile developers as product offerings. Which feature will allow you to do that?

#### Explanation

Correct answer - "**Usage Plans and API Keys**" : You can configure usage plans and API keys to allow customers to access selected APIs at agreed-upon request rates and quotas that meet their business requirements and budget constraints.

Incorrect:

"AWS Billing" - In billing you can set a spending quota notification but not API consumption

"CloudTrail" - CloudTrail does not set limits instead it is used as an audit tool

"AWS Lambda Custom Authorizers" - Lambda is a separate service than Gateway API therefore it does not determine its limit

For more information visit <https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-api-usage-plans.html>

Question 10: Correct

Your global organization has an infrastructure that is deployed with Cloud Formation. One employee, in us-east-1 has created a stack 'Application1' and made an exported output with the name 'ELBDNSName'. Another employee has created a stack for a different application 'Application2' in us-east-2 and also exported an output with the name 'ELBDNSName'. The first employee wanted to deploy the Cloud Formation stack 'Application1' in us-east-2, but it got an error. What is the cause of the error?

* ​
* Output Values in CloudFormation must have unique names across all regions
* ​
* Exported Output Values in CloudFormation must have unique names across all regions
* ​
* Exported Output Values in CloudFormation must have unique names within a single region
* (Correct)
* ​
* Output Values in CloudFormation must have unique names within a single region

#### Explanation

For each AWS account, export names must be unique within a region. In this case we would have a conflict within us-east-2.

For more information visit <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/outputs-section-structure.html>

What are outputs?

* The outputs section declares optional outputs values that we can import into other stacks!
* You can also view the outputs in the AWS Console or in using the AWS CLI
* They’re very useful for example if you define a network CloudFormation, and output the variables such as VPC ID and your Subnet IDs
* It’s the best way to perform some collaboration cross stack, as you let experts handle their own part of the stack

The Outputs section can include the following fields:

* Logical ID
  + An identifier for the current output. The logical ID must be alphanumeric (a-z, A-Z, 0-9) and unique within the template.
* Description (optional)
  + A String type that describes the output value. The value for the description declaration must be a literal string that is between 0 and 1024 bytes in length. You cannot use a parameter or function to specify the description. The description can be a maximum of 4 K in length.
* Value (required)
  + The value of the property returned by the aws cloudformation describe-stacks command. The value of an output can include literals, parameter references, pseudo-parameters, a mapping value, or intrinsic functions.
* Export (optional)
  + The name of the resource output to be exported for a [cross-stack reference](https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/walkthrough-crossstackref.html).
  + Note
    - The following restrictions apply to cross-stack references:
    - For each AWS account, Export names must be unique within a region.
    - You can't create cross-stack references across regions. You can use the intrinsic function Fn::ImportValue to import only values that have been exported within the same region.
    - For outputs, the value of the Name property of an Export can't use Ref or GetAtt functions that depend on a resource.  
      Similarly, the ImportValue function can't include Ref or GetAtt functions that depend on a resource.
    - You can't delete a stack if another stack references one of its outputs.
    - You can't modify or remove an output value that is referenced by another stack.

Question 11: Incorrect

You are configuring your CloudFront distribution to tell CloudFront where you want content to be delivered from. When configuring settings, which protocol is not supported?

* UDP (Correct)
* ​HTTP
* HTTPS
* RTMP (Incorrect)

#### Explanation

Correct answer - "UDP" : **UDP stands for User Datagram Protocol. UDP is used when speed is desirable and error correction is not necessary.** For example, UDP is frequently used for live broadcasts and online games.

Incorrect:

"HTTP" - Serves static and dynamic content

"HTTPS" - Serves static and dynamic content

"RTMP" - Serves adobe flash multimedia

For more information visit <https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/distribution-overview.html>

When you want to use CloudFront to distribute your content, you create a distribution and choose the configuration settings you want. For example:

* Your content origin—that is, the Amazon S3 bucket, MediaPackage channel, or HTTP server from which CloudFront gets the files to distribute. You can specify any combination of up to 25 Amazon S3 buckets, channels, and/or HTTP servers as your origins.
* Access—whether you want the files to be available to everyone or restrict access to some users.
* Security—whether you want CloudFront to require users to use HTTPS to access your content.
* Cookie or query-string forwarding—whether you want CloudFront to forward cookies or query strings to your origin.
* Geo-restrictions—whether you want CloudFront to prevent users in selected countries from accessing your content.
* Access logs—whether you want CloudFront to create access logs that show viewer activity.

For the current maximum number of distributions that you can create for each AWS account, see [General Quotas on Web Distributions](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/cloudfront-limits.html#limits-web-distributions) and [Quotas on RTMP Distributions](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/cloudfront-limits.html#limits-rtmp-distributions). There is no maximum number of files that you can serve per distribution.

You can use distributions to serve the following content over HTTP or HTTPS:

* Static and dynamic download content, for example, .html, .css, .js, and image files, using HTTP or HTTPS.
* Video on demand in different formats, such as Apple HTTP Live Streaming (HLS) and Microsoft Smooth Streaming. For more information, see the [Delivering Video on Demand (VOD) with CloudFront](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/on-demand-video.html).  
  You can't serve Adobe Flash multimedia content over HTTP or HTTPS, but you can serve it using a CloudFront RTMP distribution. See [RTMP Distributions](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/distribution-overview-rtmp.html).
* A live event, such as a meeting, conference, or concert, in real time. For live streaming, you can create the distribution automatically by using an AWS CloudFormation stack. For more information, see [Delivering Live Streaming Video with CloudFront and AWS Media Services](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/live-streaming.html).

For information about creating a distribution, see [Steps for Creating a Distribution (Overview)](https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/distribution-web-creating.html).

Question 13: Incorrect

You have created a Java application that uses RDS for its main data storage and ElastiCache for user session storage. The application will be deployed using Elastic Beanstalk and each deployment performed should allow any application server to reuse the RDS database while user session data stored in ElastiCache can be created for every single deployment. Which configuration will allow you to achieve that? (Select two)

* ElastiCache bundled with the application source code(Incorrect)
* ElastiCache defined in .ebextensions/(Correct)
* RDS database defined in .ebextensions/
* ElastiCache database defined externally and referenced through environment variables
* RDS database defined externally and referenced through environment variables(Correct)

#### Explanation

Correct answers - "RDS database defined externally and referenced through environment variables & ElastiCache defined in .ebextensions/ : Any resources created as part of your .ebextensions is part of your CloudFormation template and will get deleted if the environment is terminated. Resources that need to persist in environments deletions must be created externally": .

Incorrect:

"RDS database defined in .ebextensions/" - The lifetime of the RDS instance is tied to the lifetime of the Elastic Beanstalk environment

"ElastiCache database defined externally and referenced through environment variables" - In this case we do not care that data is lost so defining it in .ebextensions/ is more appropriate

"ElastiCache bundled with the application source code" - ElastiCache is a service and cannot be bundled

Question 14: Incorrect

Your company has stored all application secrets in SSM Parameter Store. The audit team has requested to get a report to better understand when and who has issued API calls against SSM Parameter Store. Which AWS service can you use to produce your report?

* CloudTrail(Correct)
* SSM Parameter Store List feature
* SSM Parameter Store Access Logs in CloudWatch Logs(Incorrect)
* ​SSM Parameter Store Access Logs in S3

#### Explanation

Correct answer - "CloudTrail" : It records API calls and helps determine source

Incorrect:

"SSM Parameter Store List feature" - There is no such thing

"SSM Parameter Store Access Logs in CloudWatch Logs" - CloudWatch can be integrated but it does not help determine who issued API calls

"SSM Parameter Store Access Logs in S3" - S3 can be integrated but it does not help determine who issued API calls

Question 15: Incorrect

You are running workloads on AWS and have embedded database connection strings within each web server hosting your applications. After failing a security audit you are encouraged to take a different approach where you store your secrets. Which AWS service can you use to manage your database connection strings?

* SSM Parameter Store(Correct)
* EFS​
* EBS
* KMS(Incorrect)

#### Explanation

Correct answer - "SSM Parameter Store" : AWS Systems Manager Parameter Store provides secure, hierarchical storage for configuration data management and secrets management. You can store data such as passwords, database strings, and license codes as parameter values. For more information visit <https://docs.aws.amazon.com/systems-manager/latest/userguide/systems-manager-paramstore.html>

Incorrect:

"EFS" - Elastic File System (EFS) is a shared file storage service for Amazon EC2 instances

"EBS" - Elastic Block Store (EBS) is recommended for data requiring a higher level of durability but not for configuration storage

"KMS" - AWS Key Management Service (KMS) makes it easy for you to create and manage keys and control the use of encryption

Question 17: Correct

You have been hired as a new Developer with no experience using CloudFormation. To learn how it works you quickly create a template and upload it through the management console. You find that the template is missing a section that is required. Which section of the template is required?

* Mappings
* Parameters
* Outputs
* Resources (Correct)

#### Explanation

Correct answer - "Resources" : Resources is the only mandatory section of the CloudFormation template and all other sections are optional. For more information visit: <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/template-anatomy.html>

Incorrect:

"Parameters" - Optional values to pass to your template at runtime

"Outputs" - Describes the values that are returned whenever you view your stack's properties.

"Mappings" - A mapping of keys and associated values that you can use to specify conditional parameter values

For more information visit <https://docs.aws.amazon.com/AmazonCloudFront/latest/DeveloperGuide/distribution-overview.html>

Templates include several major sections. The Resources section is the only required section. Some sections in a template can be in any order. However, as you build your template, it can be helpful to use the logical order shown in the following list because values in one section might refer to values from a previous section.

CloudFormation Resources?

* Resources are the core of your cloudformation template
* They represent the different AWS components that will be created and configured
* Resources are declared and can reference each other
* AWS figures out creation, updates and deletes of resources for us
* There are over 234 types of resources (!)
* Resource type identifiers are of the form:
  + AWS::aws-product-name::data-type-name

ALL RESOURCES:  
<http://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-template-resource-type-ref.html>

Optional attributes for Resources

* DependsOn: very useful to draw a dependency between two resources. For example, only create an ECS cluster after creating an ASG (auto scaling group)
* DeletionPolicy: protect resources from being deleted even if the cloudormation is deleted ( for example an RDS database)
* CreationPolicy: more details on the section on CFN init
* Metadata:
  + Anything you want, get creative!
  + + examples in the CFN init section

FAQ for resources

* Can i create a dynamic amount of resources
  + No you can’t. Everything in the cloudformation template has to be declared. YOu can’t perform code generation there
  + Workaround of the problem in the advanced section, using troposphere
* Is every AWS service supported
  + Almost. Only a select few niches are not there yet
  + You can work around that using AWS Lambda Custom Resources

Question 22: Incorrect

Your team lead has decided to make changes to a current application written in Node.js and running on a Linux server. The team lead would like to deploy the application to a Docker container, then decouple the application into microservices. Which AWS service is best suited for this change?

* ECS(Correct)
* ECR
* Lambda(Incorrect)
* EC2

#### Explanation

Correct answer - "ECS" : Amazon ECS lets you easily build all types of containerized applications, from long-running applications and microservices to batch jobs and machine learning applications. You can migrate legacy Linux or Windows applications from on-premises to the cloud and run them as containerized applications using Amazon ECS.

"ECR" - Amazon ECR is a managed AWS Docker registry service and is an extension to Amazon ECS

"Lambda" - Lambda functions cannot run in Docker containers

"EC2" - Amazon ECS uses Docker images in task definitions to launch containers on Amazon EC2 instances in your clusters

For more information visit https://docs.aws.amazon.com/AmazonECS/latest/developerguide/docker-basics.html

Question 24: Incorrect

An application is hosted by a 3rd party and exposed at yourapp.3rdparty.com. You would like to have your users access your application using www.mydomain.com, which you own and manage under Route 53. What record should you create?

* Create an A record
* Create a CNAME record(Correct)
* Create a PTR record
* Create an Alias Record(Incorrect)

#### Explanation

Correct answer - "Create a CNAME record" : CNAME records can be used to map one name to another. Read more:

https://docs.aws.amazon.com/Route 53/latest/DeveloperGuide/ResourceRecordTypes.html#CNAMEFormat

Incorrect:

"Create an A record" - Used to point a domain or subdomain to an IP address

"Create a PTR record" - A Pointer (PTR) record resolves an IP address to a fully-qualified domain name (FQDN) as an opposite to what A record does. PTR records are also called Reverse DNS records

"Create an Alias Record" - Alias records let you route traffic to selected AWS resources, such as CloudFront distributions and Amazon S3 buckets. 3rd party websites do not qualify for these as we have no control over those

Question 26: Incorrect

You are a developer working on AWS Lambda functions that are invoked over HTTPS. The functions are invoked via REST API's using Amazon API Gateway for methods such as GET and PUT. When a GET request is invoked by consumers all fields returned by your Lambda functions are seen. Your supervisor asks you to format the data response. What can you do with API Gateway to satisfy the request?

* Deploy an interceptor shell script
* ​Use Mapping Templates (Correct)
* Use a stage variable (Incorrect)
* Use a Lambda custom interceptor

#### Explanation

Correct answer - "Use Mapping Templates" : API Gateway lets you use mapping templates to map the payload from a method request to the corresponding integration request and from an integration response to the corresponding method response.

Incorrect:

"Deploy an interceptor shell script" - This is not possible

"Use a stage variable" - They act like environment variables

"Use a Lambda custom interceptor" - Lambda is a great service but it cannot intercept in this way

For more information visit <https://docs.aws.amazon.com/apigateway/latest/developerguide/api-gateway-mapping-template-reference.html>

Question 27: Incorrect

You are creating a Cloud Formation template to deploy your CMS application running on an EC2 instance within your AWS account. Because you would like to deploy the application across multiple regions you have decided to create a Map of all the possible values for the base AMI. How should you invoke the !FindInMap function?

* ​!FindInMap [ MapName, TopLevelKey, SecondLevelKey ](Correct)
* !FindInMap [ MapName, TopLevelKey ]
* !FindInMap [ MapName ]
* !FindInMap [ MapName, TopLevelKey, SecondLevelKey, ThirdLevelKey ](Incorrect)

#### Explanation

Correct answer - !FindInMap [ MapName, TopLevelKey, SecondLevelKey ] : Read documentation link to view arguments

For more information visit <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-findinmap.html>

Question 28: Incorrect

Your company has created a localized application and as such would like their Brazilian users to be served by their Brazilian servers. Other users around the globe should not be able to access your servers through DNS queries. Which Route 53 routing policy meets this requirement?

* ​
* Latency
* ​Geolocation(Correct)
* Failover
* Weighted(Incorrect)

#### Explanation

Correct Answer: "Geolocation" - Geolocation routing lets you choose the resources that serve your traffic based on the geographic location of your users, meaning the location that DNS queries originate from. For example, you might want all queries from Europe to be routed to an ELB load balancer in the Frankfurt region. You can also use geolocation routing to restrict distribution of content to only the locations in which you have distribution rights

You can create a default record that handles both queries from IP addresses that aren't mapped to any location and queries that come from locations that you haven't created geolocation records for. If you don't create a default record, Route 53 returns a "no answer" response for queries from those locations.

Incorrect Answers:

"Failover" - Failover routing lets you route traffic to a resource when the resource is healthy or to a different resource when the first resource is unhealthy

"Latency" - If your application is hosted in multiple AWS Regions, you can improve performance for your users by serving their requests from the AWS Region that provides the lowest latency

"Weighted" - Use to route traffic to multiple resources in proportions that you specify

For more information visit https://docs.aws.amazon.com/Route53/latest/DeveloperGuide/routing-policy.html#routing-policy-geo

Question 31: Incorrect

You are a developer at a company that creates serverless functions in AWS Lambda. Functions are invoked by clients via AWS API Gateway, which anyone can access. Your team lead would like to control access using a 3rd party authorized mechanism. Which authorizer should you use?

* IAM permissions with sigv4
* Lambda Authorizer(Correct)
* Cognito User Pools(Incorrect)
* API Gateway User Pools

#### Explanation

Correct answer - "Lambda Authorizer" : An Amazon API Gateway Lambda authorizer (formerly known as a custom authorizer) is a Lambda function that you provide to control access to your API. A Lambda authorizer uses bearer token authentication strategies, such as OAuth or SAML. Before creating an API Gateway Lambda authorizer, you must first create the AWS Lambda function that implements the logic to authorize and, if necessary, to authenticate the caller.

Incorrect:

"IAM permissions with sigv4" - You will still need to provide permissions but our requirements have need for 3rd party authentication which is where Lambda Authorizer comes in to play

"Cognito User Pools" - This is managed by AWS therefore does not meet our requirements

"API Gateway User Pools" - These do not exist

For more information visit https://docs.aws.amazon.com/apigateway/latest/developerguide/apigateway-use-lambda-authorizer.html

Question 36: Incorrect

You have written an application that uploads objects onto an S3 bucket. Every single multi-part upload request is at least 1TB in size. You expect the multi-part request to increase in size as operations begin to grow. What is the maximum file size for individual objects stored on an S3 bucket?

* 5 TB(Correct)​
* 5 GB(Incorrect)
* infinite
* 1 TB

#### Explanation

The bucket size is unlimited. But individual Amazon S3 objects can range in size from a minimum of 0 bytes to a maximum of 5 terabytes. The largest object that can be uploaded in a single PUT is 5 gigabytes. Read more: <https://aws.amazon.com/s3/faqs/>

Question 37: Incorrect

A developer in your company has configured an AWS CodeBuild build. The build fails and the developer needs to quickly troubleshoot the issue to see which commands or settings located in the BuildSpec file are causing an issue. Which approach will help them accomplish this?

* Freeze the CodeBuild during its next execution
* SSH into the CodeBuild Docker container
* Run AWS CodeBuild locally(Correct)
* Enable detailed monitoring(Incorrect)

#### Explanation

Correct answer - "Run AWS CodeBuild locally": With the Local Build support for AWS CodeBuild, you just specify the location of your source code, choose your build settings, and CodeBuild runs build scripts for compiling, testing, and packaging your code.

Incorrect:

"SSH into the CodeBuild Docker container" - Not possible that is why test locally is available

"Freeze the CodeBuild during its next execution" - You cannot freeze but you can stop it

"Enable detailed monitoring" - You do not enable detailed monitoring but you can specify output logs to CloudWatch

For more information visit <https://docs.aws.amazon.com/codebuild/latest/userguide/use-codebuild-agent.html>

Question 41: Incorrect

Your company has configured AWS Organizations to manage multiple AWS accounts. Within each AWS account, there are many CloudFormation scripts running. Your manager has requested that each script output the account number of the account the script was executed in. Which Pseudo parameter will you use to get this information?

* AWS::StackName (Incorrect)
* AWS::NoValue
* AWS::Region
* AWS::AccountId (Correct)

#### Explanation

Correct answer - "AWS::AccountId : Returns the AWS account ID of the account in which the stack is being created.

Incorrect:

"AWS::NoValue" - Removes the corresponding resource property

"AWS::Region" - Returns a string representing the AWS Region where resource is being created

"AWS::StackName" - Returns stack name

For more information visit <https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/pseudo-parameter-reference.html>

**Pseudo parameters** are parameters that **are predefined by AWS CloudFormation.** You **do not declare them in your template.** Use them the **same way as you would a parameter, as the argument for the Ref function.**

List of pseudo parameters

* AWS::AccountID
  + Returns the AWS account ID of the account in which the stack is being created
* AWS::NotificationARNs
  + Returns the list of notification Amazon Resource Names (ARNs) for the current stack
  + To get a single ARN from the list, use Fn::Select
* AWS::NoValue
  + Removes the corresponding resource property when specified as a return value in the Fn::If intrinsic function
  + For example you can use the AWS::NoValue parameter when you want to use a snapshot for an Amazon RDS DB instance only if a snapshot ID is provided. If the UseDBSnapshot condition evaluates to true, AWS CloudFormation uses the DBSnapshotName parameter value for the DBSnapshotIdentifier property. If the condition evaluates to false, AWS CloudFormation removes the DBSnapshotIdentifier property.
* AWS::Partition
  + Returns the partition that the resource is in. For standard AWS region, the partition is aws. For resources in other partitions, the partition is aws-partitionname.
* AWS::Region
  + Returns a string representing the AWS region in which the encompassing resource is being created, such as us-west-2
* AWS::StackId
  + Returns the id of the stack as specified with the aws cloudformation create-stack command, such as arn:cloudformation:us-west-2:123456789012:stack/teststack/51af3dc0-da77-11e4-872e-1234567db123
* AWS::StackName
  + Returns the name of the stack as specified with the aws cloudformation create-stack command, such as teststack
* AWS::URLSuffix
  + Returns the suffix for a domain. The suffix is typically amazonaws.com, but might differ region.

Question 42: Incorrect

As a Developer, you have the responsibility of maintaining the infrastructure of the company's technology. The company is limited in the number of engineers it can hire and need to keep maintenance very low. One of those assets under your maintenance is AWS Lambda functions and you would like to deploy new versions and shift traffic to them. Which AWS service meets your needs?

* CodeCommit
* CodeBuild
* CodeDeploy(Correct)
* CodePipeline(Incorrect)

#### Explanation

Correct answer - "CodeDeploy" : You can deploy nearly unlimited variety of application content, such as code, serverless AWS Lambda functions, web and configuration files, executables, packages, scripts, multimedia files, and so on.

Incorrect:

"CodeBuild" - AWS CodeBuild is a fully managed continuous integration service that compiles source code, runs tests, and produces software packages that are ready to deploy

"CodeCommit" - CodeCommit eliminates the need to operate your own source control system or worry about scaling its infrastructure

"CodePipeline" - CodePipeline automates the build, test, and deploy phases of your release process every time there is a code change, based on the release model you define

For more information visit https://docs.aws.amazon.com/codedeploy/latest/userguide/welcome.html

Question 46: Incorrect

You are a developer in a manufacturing company that has several servers on-site. The company decides to move new development to the cloud using serverless technology. You decide to use the AWS Serverless Application Model (AWS SAM) and work with an AWS SAM template file to represent your serverless architecture. Which of the following is not a valid serverless resource type?

* AWS::Serverless::UserPool (Correct)
* AWS::Serverless::Function
* AWS::Serverless::Api
* AWS::Serverless::SimpleTable (Incorrect)

#### Explanation

Correct answer - "AWS::Serverless::UserPool" : UserPool applies to the Cognito service which is used for authentication for mobile app and web. There is no resource named UserPool in the Serverless Application Model.

Incorrect:

"AWS::Serverless::Function" - This resource creates a lambda function

"AWS::Serverless::Api" - Describes an API Gateway resource. It is useful for advanced use cases where you want full control and flexibility when you configure your APIs.

"AWS::Serverless::SimpleTable" - Syntax for describing how to create DynamoDB tables

For more information visit <https://docs.aws.amazon.com/serverless-application-model/latest/developerguide/serverless-sam-template.html#serverless-sam-template-function>

Question 49: Incorrect

An organization is investigating an issue where ten virtual machines were terminated unexpectedly. You have been hired as an independent consultant to find out how this happened. Which AWS service will assist with this task?

* CloudWatch(Incorrect)
* EC2 Logs
* CloudTrail(Correct)
* Config

#### Explanation

Correct answer - "CloudTrail": CloudTrail records API calls made and will list details such as who did it and when call was made. This is a great way to start investigating.

Incorrect:

"EC2 Logs" - These logs only pertain to the system within and not help to determine who deleted an instance

"CloudWatch" - Will help you monitor but not determine who deleted an instance

"Config" - Helps determine what change but not who changed it

Question 51: Incorrect

A developer has been asked to create an AWS Elastic Beanstalk environment. The environment will handle deployment for an application that has high traffic and runs 24/7. You would like to deploy a new application version using Beanstalk but don't want to bring your capacity down. You are also very cost conscious and want to ensure any added cost will be minimal. Which deployment meets this need?

* immutable
* rolling with additional batches(Correct)
* all at once
* rolling(Incorrect)
* blue/green

#### Explanation

Correct answer - "rolling with additional batches" : Rolling with additional batches is the most optimum deployment policy when a user doesn't want to compromise on the output capacity of the application but also keep the additional expense incurs to the minimum.

Incorrect:

"immutable" - Immutable creates a full deployment including a copy of all the resources (with new versions if applied) in a new Autoscaling group. Therefore, for the time the rolling is going on you pay 2 times the normal price because you have everything doubled. Therefore, it can not be a good answer since the company wants to be "very cost-conscious".

"all at once" - Will bring the capacity down as all of your application instances will be down for a bit.

"rolling" - Will bring the capacity down as some of your application instances will be down for a bit.

"blue/green" - This will work by creating an entirely new environment but will cost a lot more than "rolling with additional batches".

Question 58: Incorrect

You are a developer writing a CloudFormation template written in YAML. Your template will consist of the creation of EC2 instances and one RDS resource. Once your resources are created you would like to output the connection endpoint for the RDS database. Which intrinsic function returns the value needed?

* !Sub
* !Ref(Incorrect)
* !GetAtt(Correct)
* !FindInMap

#### Explanation

Correct answer - "!GetAtt" : The Fn::GetAtt intrinsic function returns the value of an attribute from a resource in the template. We can use the above function to get the regions ID attribute of the required EC2 instance by passing region ID as the attributeName and EC2 instance ID as logicalNameOfResource.

Incorrect:

!Ref - Returns the value of the specified parameter or resource

!Sub - Substitutes variables in an input string with values that you specify

!FindInMap - For example you can use this in the Mappings section that contains a single map, RegionMap, that associates AMIs with AWS regions

For more information visit https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/intrinsic-function-reference-getatt.html

Question 60: Incorrect

You have created an AWS CodePipeline pipeline that performs many actions in a specified order. After careful revision of your steps, you determine that some steps need to run at the same time instead of by specified order to speed up your pipeline. What method will achieve this?

* Upgrade the AWS CodePipeline instance type
* Re-design the pipeline to include steps to occur in parallel where possible(Correct)
* Ask for a 'speed boost' from the AWS support​
* Enable pipeline caching(Incorrect)

#### Explanation

Correct answer - "Re-design the pipeline to include steps to occur in parallel where possible" : Actions in parallel in CodePipeline can help with speed requirements.

Incorrect:

"Upgrade the AWS CodePipeline instance type" - There is no instance types. A pipeline is a workflow construct that describes how software changes go through a release process. You define the workflow with a sequence of stages and actions.

"Ask for a 'speed boost' from the AWS support" - You can but they may redirect you to documentation to re-design your pipeline

"Enable pipeline caching" - There is no caching instead pipeline is a workflow that describes the stages and actions

For more information visit https://docs.aws.amazon.com/codepipeline/latest/userguide/reference-pipeline-structure.html#action-requirements

RESULTS

## Practice Test #1 (AWS Certified Developer Associate - DVA-C01) - Results

65 questions | 2 hours 10 minutes | 72% correct required to pass

Correct**64.6%**

Correct

Wrong

Skipped

Attempt 1: Failed (72% required to pass)

64% correct (42/65)

1 hour 19 minutes

May 2, 2020 6:26 PM

**Review questions**

## Knowledge areas

### CloudWatch (1 question)

100%

### ECR (2 questions)

100%

### SSM (1 question)

100%

### API Gateway (5 questions)

40%

60%

### EC2 (3 questions)

100%

### SNS (1 question)

100%

### Elastic Beanstalk (6 questions)

67%

33%

### CodeDeploy (2 questions)

50%

50%

### CodeBuild (3 questions)

67%

33%

### ElastiCache (2 questions)

100%

### SAM (2 questions)

50%

50%

### CloudFront (1 question)

100%

### S3 (2 questions)

50%

50%

### X-Ray (2 questions)

100%

### DynamoDB (4 questions)

100%

### SQS (3 questions)

100%

### KMS (2 questions)

50%

50%

### CloudFormation (7 questions)

43%

57%

### ECS (3 questions)

67%

33%

### CodePipeline (3 questions)

67%

33%

### IAM (1 question)

100%

### Route 53 (2 questions)

100%

### Cognito (1 question)

100%

### STS (1 question)

100%

### CloudTrail (3 questions)

100%

### CLI (1 question)

100%

### Kinesis (1 question)

100%

Correct

Wrong

Skipped