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Report Card

Expectations	Score
1. AWS Certified DevOps Pro - Domain 1	70 %
2. AWS Certified DevOps Pro - Domain 2	30 %
3. AWS Certified DevOps Pro - Domain 3	20 %
4. AWS Certified DevOps Pro - Domain 4	50 %

Exam Breakdown

AWS Certified DevOps Pro - Domain 1   ⌃

1. **You work for a very large pharmaceutical company that has multiple applications which are very different and built on different programming languages. How can you deploy applications as quickly as possible?**   ⌃

   A. Create a Lambda function deployment package consisting of code and any

dependencies.

B. Develop each app in a separate Docker containers and deploy using CloudFormation.

C. Develop each app in one Docker container and deploy using ElasticBeanstalk.

D. Develop each app in a separate Docker container and deploy using Elastic Beanstalk ✓ **Correct**

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2. You are developing a cloud formation template - You have defined a VPC, Internet gateway, a subnet and you configure it to assign public IP's. You create an EC2 instance in the template and configure it to occupy the public subnet. When applying the template you notice an error, the EC2 instance fails to get a public IP. You also notice that at the point when the instance is created, you don't have the gateway and the attachment. ⌃

What is the cause and how can you fix?

A. Use a DependsOn attribute and specify that the creation of a specific resource follows another. After you add a DependsOn attribute to a resource, that resource is created only after the creation of the resource specified in theDependsOn attribute. ✓ **Correct**

💬 **Why is this correct?**
When creating resources with CloudFormation, we oftentimes have resources with dependencies. We can fix that by explicitly specifying that a resource DependsOn another resource. That way, CloudFormation will create the resources in the correct order.

B. Use a CreationPolicy and associate it with the corresponding resource in the stack. This will eliminate any dependencies between resources.

C. Declare a WaitCondition on the resource that is dependent on the other resource. This will ensure the dependency has been established and the stack can build.

D. Use a Custom Resource attribute and specify that the creation of a specific resource follows another. After you add a CustomResource attribute to a resource, that resource is created only after the creation of the resource specified in the DependsOn attribute. ✗ **Your Answer**

💬 **Why is this incorrect?**

When creating resources with CloudFormation, we oftentimes have resources with dependencies. We can fix that by explicitly specifying that a resource DependsOn another resource. That way, CloudFormation will create the resources in the correct order.

👍 👎

3. You've been tasked with improving the current deployment process by making it easier to deploy and reducing the time it takes. To do this, you create a continuous integration (CI) pipeline that builds AMIs. How can you build this in an automated manner that is also cost-effective and takes the least amount of time, considering that your team deploys 5 times a week?

A. Dedicate an instance to this. Attach an EBS volume to that instance, ✗ **Your Answer** download all of the code and dependencies to that volume, then call the CreateImage API to make an AMI out of that volume

💬 **Why is this incorrect?**
Because your team only deploys 5 times a week, it doesn't make sense to have an instance dedicated to this.

B. Have the CI system launch a new instance, then bootstrap the code and ✓ **Correct** dependencies on that instance, and create an AMI using the CreateImage API call.

💬 **Why is this correct?**
Correct.

C. Use OpsWorks to launch an EBS-backed instance, then use a recipe to bootstrap the instance, and then have the CI system use the CreateImage API call to make an AMI from it.

D. Upload the code and dependencies to Amazon S3, launch an instance, download the package from Amazon S3, then create the AMI with the CreateSnapshot API call.

👍 👎

4. You work for a large software development company who produce a HR application. The business traditionally installs this application into customer premises but is looking to utilise AWS to host customer applications within their AWS environment. The business has a requirement for systems automation using CloudFormation to allow the application environment to be deployed. The business has a single large VPC defined which contains shared development, QA and monitoring systems. You have been asked to automated the

deployment of instances of the application into a separate VPC. You need to ensure that each VPC has a separate non overlapping CIDR to ensure VPC peering can be configured if required. Choose the best approach from the options below.

A. Use a CloudFormation template for each application environment, create a new stack for each environment. The template should create the VPC, subnets, networking config, and deploy application servers. Don't supply CIDR information to the VPC or Subnets and allow CloudFormation to automatically populate those values.

B. Create a DynamoDB table to store IP range information. Use ✓ **Correct** CloudFormation & CustomResources backed by AWS Lambda to consult the IP range table during every CREATE, UPDATE or DELETE operation and allocate, update or delete a set of IP ranges for the stack to use. The lambda function would ensure that IP ranges are non overlapping, and are allocated and de-allocated as stacks are created and deleted.

C. Use a CloudFormation template for each application environment, create a new stack for each environment. The template should create the VPC, subnets, networking config, and deploy application servers. Ask for the CIDR information as a CloudFormation parameter.

D. Use AWS Config to manage the configuration of IP range resources within the account VPC's. Configure event integration between CloudFormation and AWS config and use DynamoDB to maintain table of allocated ranges within the environment.

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5. You work for a small start-up and have decided to use Elastic Beanstalk to deploy your application. You are using EBS to store important data and it needs to be available on all your EC2 instances. ︿ How can you configure Elastic Beanstalk to make sure the data is always on the EC2 instances during each deployment? Choose 2.

A. Create a .ebextensions directory and add commands to the config file . ✓ **Correct**

💬 **Why is this correct?**
Correct. You can add AWS Elastic Beanstalk configuration files (.ebextensions) to your web application's source code to configure your environment and customize the AWS resources that it contains. Configuration files are YAML formatted documents with a .config file extension that you place in a folder named .ebextensions and deploy in your application source bundle. Each instance that you launch has an associated root device volume, either an Amazon EBS volume or an instance store volume. You can use block device mapping to specify additional EBS volumes or instance store volumes to attach to an instance when it's launched. You can also attach additional EBS volumes to a running instance; see Attaching an Amazon EBS Volume to an Instance.

However, the only way to attach instance store volumes to an instance is to use block device mapping to attach them as the instance is launched.
https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/ebextensions.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/ebextensions.html)

B. Add a BlockDeviceMappings option to your launch configuration.　　✓ **Correct**

💬 **Why is this correct?**
Correct. EC2 block device mapping is an embedded property of AWS::EC2::Instance.
https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-blockdev-mapping.html
(https://docs.aws.amazon.com/AWSCloudFormation/latest/UserGuide/aws-properties-ec2-blockdev-mapping.html)
https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/ebextensions.html (https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/ebextensions.html)

C. Use option_settings key to modify the Elastic Beanstalk configuration and define variables that can be retrieved from your application using environment variables.　　✗ **Your Answer**

💬 **Why is this incorrect?**
You can add AWS Elastic Beanstalk configuration files (.ebextensions) to your web application's source code to configure your environment and customize the AWS resources that it contains. Configuration files are YAML formatted documents with a .config file extension that you place in a folder named .ebextensions and deploy in your application source bundle. Each instance that you launch has an associated root device volume, either an Amazon EBS volume or an instance store volume. You can use block device mapping to specify additional EBS volumes or instance store volumes to attach to an instance when it's launched. You can also attach additional EBS volumes to a running instance; see Attaching an Amazon EBS Volume to an Instance. However, the only way to attach instance store volumes to an instance is to use block device mapping to attach them as the instance is launched.

D. Create a custom Chef recipe that mounts the EBS volume to each instance in the launch.　　✗ **Your Answer**

💬 **Why is this incorrect?**
You can add AWS Elastic Beanstalk configuration files (.ebextensions) to your web application's source code to configure your environment and customize the AWS resources that it contains. Configuration files are YAML formatted documents with a .config file extension that you place in a folder named .ebextensions and deploy in your application source bundle. Each instance that you launch has an associated root device volume, either an Amazon EBS volume or an instance store volume. You can use block device mapping to specify additional EBS volumes or instance store volumes to attach to an instance when it's launched. You can also attach additional EBS volumes to a

running instance; see Attaching an Amazon EBS Volume to an Instance. However, the only way to attach instance store volumes to an instance is to use block device mapping to attach them as the instance is launched.

👍 👎

6. With multicontainer Docker environments on Elastic Beanstalk we are required to include which file? ⌃

A. Dockerrun.json	
B. .ebextensions	
C. Dockerrun.aws.json	✓ **Correct**
D. Dockerfile	

👍 👎

7. Your CIO has asked you to move your server build automation towards a 'desired state' style architecture. Which options below would potential meet that requirement. ⌃

A. Use the AWS Config service to control the state of EC2 instances configure its 'state remediation' feature to add desired state to EC2 instances as required	
B. Move your EC2 and environment build processes to CloudFormation and use the "UserData" and Fn:base64 function to install a 3rd party configuration management agent into all EC2 instances.	✓ **Correct**
C. Move your EC2 and environment build processes to CloudFormation and use, cfn-init and the 'AWS::CloudFormation::Init' directive.	✓ **Correct**
D. Move your EC2 and environment build processes to CloudFormation and use the "UserData" and Fn:base64 function to pass desired-state config into EC2 instances at startup.	

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8. You are currently running an application on EC2 instances which are inside of an Auto Scaling group. You've implemented a system that automates deployments of configurations and the application to newly

launched instances. The system uses a configuration management tool that works in a standalone configuration, with no master node. Because the application load is unpredictable, new instances must be brought into service within three minutes of the launch of the instance operating system. The deployment stages take the following times to complete:

- Installing the configuration management agent: 2mins
- Configuring the instance with artifacts: 3mins
- Installing the application framework: 15mins
- Deploying the application code: 1min

What process should you use to automate the deployment using this standalone agent configuration?

A. Configure the Auto Scaling launch configuration with a UserData script that installs the agent, pulls configuration artifacts and application code from an Amazon S3 bucket, and then executes the agent to configure the infrastructure and application.

B. Bake a custom AMI that has all the components pre-installed, including the agent, configuration artifacts, application frameworks, and code. Then, have a startup script that executes the agent to configure the system on startup. ✓ **Correct**

💬 **Why is this correct?**
Correct.

C. Configure an extra instance to poll the Amazon EC2 API to check for new instances launched in the Auto Scaling group. When it finds a new instance, it executes a remote script via SSH to install the agent, copy the configuration artifacts and application code, and then finally runs the agent to configure the new instance. ✗ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. Using a Pre-Baked AMI is a better approach to speed up deployments.

D. Bake a custom AMI that has all the components pre-installed, including the agent, configuration artifacts, application frameworks, and code.

👍 👎

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9. An application you built and launched on AWS using Auto Scaling, an Elastic Load Balancer, RDS database, and a VPC, requires that you run special actions as your instances launch or terminate. These actions include:

- Pulling logs before an instance terminates
- Sending an SNS notification at instance launch

To satisfy this requirement, you decide to use Auto Scaling lifecycle hooks. At what instance states will these actions run?

A. Pending:Action	
B. Terminating:Action	
C. Pending:Wait	✓ **Correct**
D. Terminating:Wait	✓ **Correct**

👍 👎

10. Our team is tasked with migrating an existing application running on a custom application server to AWS. The application also has custom dependencies, and so we're afraid it won't work properly. What is a possible solution? ⌃

A. Package the application in multiple Docker containers and deploy with CloudFormation.	
B. Store the code in a Git repository and develop custom package repository managers for each application's dependencies.	
C. We can package the application and dependencies with Docker, and deploy the Docker container with Elastic Beanstalk.	✓ **Correct**
D. Use the CloudFormation Docker import service to migrate the application.	

👍 👎

11. You are in a meeting with a junior developer in the business. She has been asked to write a number of scripts for a project she is working on. The developer has heard of something called a 'provider chain' which is how the AWS CLI locates and preferences authentication details it's provided with. She has asked you to confirm the order in which the CLI selects credentials to use. Which option below is the correct order :- ⌃

A. Instance credentials -> Command line options -> Environment variables -> CLI credentials -> CLI Configuration File -> Container credentials
B. Command line options -> CLI credentials -> CLI Configuration File -> Instance

credentials

C. CLI credentials -> Environment variables -> CLI Configuration File

D. Command line options -> Environment variables -> CLI credentials ->   ✓ **Correct**
CLI Configuration File -> Container credentials -> Instance credentials

👍 👎

12. **You work for a business which performs Microsoft Sharepoint installations for small, medium and large businesses. recently the company has started to install these environments into AWS for clients and after much success is ramping up that area of the business. The sales team have asked you, as the operations engineer to develop a automated processes for creating demonstration environments for use during sales meetings. The sales team have indicated that their requirements, in order of priority are :-**

1. **the environments should be fast to provision - sales meetings are** ⌃
   45 minutes to 1 hour, they would like to begin the provisioning at the start of the meeting and have an environment available at the half way point.
2. **the environments should be as economical as possible and removed at the end of the meeting**
3. **Some customisation should be possible - but this isnt a priority and cannot come at the cost of requirement #1 and #2.**

In planning the automation, which option do you believe will meet the requirements the best.

A. Deploy the Sharepoint environment using elastic beanstalk using the enterprise sized environment option.

B. Perform a generic installation of Sharepoint into a Windows Server   ✓ **Correct**
image. Take an AMI of the EC2 instance. Create a CloudFormation template which uses this custom AMI and provisions it within an environment. Create a web interface allowing the sales team to apply the template, create a stack and access the resources in the sales meeting.

C. Use an OPSWORKS template to provision the environment by locating the SharePoint image in the OPSWORKS marketplace.

D. Run thought a manual installation of SharePoint, listing all build steps. Create a CloudFormation Template which uses 'userdata' or 'cfn-init' to perform the install into a AWS provided windows server AMI. Create a web interface allowing the sales team to apply the template, create a stack and access the resources in the sales meeting.

👍 👎

13. While you would like to start building out parts of your infrastructure with CloudFormation, you are still receiving requirements for certain parts of the environment. This environment is quite complex. It involves networking components, policies, and multiple three-tier applications. Unfortunately you're not sure exactly how many more components there will be. How can you configure this solution?

A. Create multiple separate templates for each logical part of the system, and provide the outputs from one to the next using an Amazon Elastic Compute Cloud (EC2) Instance running the Python SDK for finer control.

B. Create multiple separate templates for each logical part of the system, creating nested stacks in AWS CloudFormation and maintaining these separate templates in version-control.   ✓ **Correct**

C. Separate the networking layer (a VPC) into a separate CloudFormation template, then stick all other parts in one template. This is better since the VPC does not often change, while the other resources can change more often.

D. Create a single template by hand to encompass all resources that you need for the system, so you only have a single template to version-control. Once new requirements emerge, you can simply update the stack.

👍 👎

14. After much consideration, based on the requirements of your deployment, you have decided to use CloudFormation instead of OpsWorks or Elastic Beanstalk. Unfortunately, you have discovered that there is a resource type that is not supported by CloudFormation. How can you solve this?

A. Use a configuration management tool such as Chef, Puppet, or Ansible.

B. Create a custom resource type using the template developer, custom resource template, and CloudFormation.   ✓ **Correct**

C. Specify the custom resource by separating your template into multiple templates by using nested stacks.

D. Specify more mappings and separate your template into multiple templates by using nested stacks.

👍 👎

15. You have a Node.js application and need to deploy it in the simplest way possible since many of your developers do not have any experience with AWS. Which tool shall you use? ⌃

A. Custom deployment script + Lambda

B. Elastic Beanstalk ✓ **Correct**

💬 **Why is this correct?**
Elastic Beanstalk is a high-level deployment tool that helps you get an app from your desktop to the web in a matter of minutes. Elastic Beanstalk handles the details of your hosting environment—capacity provisioning, load balancing, scaling, and application health monitoring—so you don't have to.

C. CloudFormation ✕ **Your Answer**

💬 **Why is this incorrect?**
Elastic Beanstalk is a high-level deployment tool that helps you get an app from your desktop to the web in a matter of minutes. Elastic Beanstalk handles the details of your hosting environment—capacity provisioning, load balancing, scaling, and application health monitoring—so you don't have to.

D. OpsWorks

👍 👎

16. You have been asked to implement a blue/green deployment procedure for one of your applications running within an elastic beanstalk environment. Which option below represents the correct way to implement this objective with elastic beanstalk. ⌃

A. Create two seperate Elastic Beanstalk applications, each with their own environment and use cloud formation together with route 53 and its health checks to implement weighted round robin. ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect - this isn't a correct usage of the AWS products mentioned. Weighted routing is more used for A/B testing, rather than Blue/Green deployments.

B. Ensure you have a single environment, prepare a new app version, deploy this using a rolling update style deployment with the blue/green deployment pause option enabled.

C. Elastic Beanstalk is not capable of blue/green deployments, an alternative product should be used.

D. Create a secondary environment, deploy a new application version to this environment, test, and then swap environment URL's using the CLI/API or Console.   ✓ **Correct**

> 💬 **Why is this correct?**
> Correct - this is the recommended way or performing blue/green deployment with elastic beanstalk.

👍 👎

17. **Select the option with order of precedence from least to highest for Elastic Beanstalk.**   ⌃

A. 1) Saved configurations, 2) .ebextension configuration files, 3) settings applied directly to the environment via the console, CLIs, or SDKS.

B. 1) .ebextension configuration files, 2) settings applied directly to the environment via the console, CLIs, or SDKS, 3) saved configurations,

C. 1) Settings applied directly to the environment via the console, CLIs, or SDKS, 2) saved configurations, 3) .ebextension configuration files.

D. 1) .ebextension configuration files, 2) saved configurations, 3) settings applied directly to the environment via the console, CLIs, or SDKS .   ✓ **Correct**

👍 👎

18. **You have configured ELB with Auto Scaling. You decide to suspend Auto Scaling AddToLoadBalancer for a period of time. What will happen to the instances launched while you had this process suspended?**   ⌃

A. The instances will be automatically added as soon as you start the AddToLoadBalancer again.

B. The instances will not be automatically added to ELB and you will have to manually register when the process is resumed.   ✓ **Correct**

C. The instances will be added to the ELB after you have resumed the process for 24 hours.

D. You are not able to suspend the AddToLoadBalancer process.

👍 👎

19. You have decided you need to change the instance type of your instances in production. You currently have 8 instances in production. You cannot have any interruption in service and need to ensure 4 instances are always running during the update. You need to make sure your customers have a seamless experience with your application during the update. Which policy should you use? ⌃

A. AutoScalingReplacingUpdate

B. AutoScalingScheduledAction

C. AutoScalingRollingUpdate ✓ **Correct**

D. AutoScalingIntegrationUpdate

👍 👎

20. You have a deployment pipeline that uses tools like Jenkins, Travis CI, and CodeShip. How can make sure you are deploying consistent versions of your application using OpsWorks? ⌃

A. Commit a new version of your code to a repository, which triggers your pipeline and uploads the tested code to Amazon S3 as an archive. From that point on, since that archive is our source for apps and cookbooks, all app deployments or cookbook updates will install the code from that archive file and every instance will have the same code. ✓ **Correct**

B. Run a Deploy command to deploy your application to a set of application server instances. The instances run recipes that deploy the application and any related files from its repository to the layer's instances.

C. Commit a new version of your code to your git repository, which triggers your pipeline and uploads the tested code to a CodeCommit archive. From that point on, since that archive is your source for apps and cookbooks, all app deployments or cookbook updates will install the code from that archive file and every instance will have the same code.

D. Run a Configure command to configure your application to a set of application server instances. The instances run recipes that deploy the application and any related files from its repository to the layer's instances.

👍 👎

AWS Certified DevOps Pro - Domain 2   ⌃

1. Your supervisor has requested a way to analyze traffic patterns for your application. You need to capture all connection information from your load balancer every 10 minutes. Pick a solution from below.   ⌃

A. Use a CloudWatch Logs Agent.

B. Use AWS CloudTrail with your load balancer.

C. Create a custom metric CloudWatch filter on your load balancer.   ✗ **Your Answer**

💬 **Why is this incorrect?**
The access logs for Elastic Load Balancing capture detailed information for requests made to your load balancer and stores them as log files in the Amazon S3 bucket that you specify. Each log contains details such as the time a request was received, the client's IP address, latencies, request path, and server responses. You can use these access logs to analyze traffic patterns and to troubleshoot your back-end applications.

D. Enable access logs on the load balancer.   ✓ **Correct**

💬 **Why is this correct?**
The access logs for Elastic Load Balancing capture detailed information for requests made to your load balancer and stores them as log files in the Amazon S3 bucket that you specify. Each log contains details such as the time a request was received, the client's IP address, latencies, request path, and server responses. You can use these access logs to analyze traffic patterns and to troubleshoot your back-end applications.

👍 👎

2. One of the Lambda functions your business uses for a business-critical, real-time security process has stopped working. It's a new function that was implemented by a staff member who has left the business. In an attempt to diagnose the problem, you look for the logs of the Lambda function but cannot locate any logging for the function, which has been deployed to production for 3-4 weeks. You need to understand why the function isn't operating as expected. What could be the reason for the lack of logging, and what is a suitable corrective action?   ⌃

A. There are too many Lambda functions running at once; there is a   ✕ **Your Answer**
rate limit for writing to CloudWatch Logs, and the most recently
created function gets the lowest priority. Adjust the priority manually, or
log a support ticket to increase CloudWatch rate limits.

💬 **Why is this incorrect?**
This mechanic doesn't exist.

B. The Lambda function is configured to log directly to S3 rather than using
CloudWatch Logs. Add code within the function to log to CloudWatch Logs.

C. The previous engineer didn't configure a valid log configuration within AWS
CloudWatch for the Lambda function. Create the log stream, and the function will begin
logging.

D. The role assigned to the Lambda function has insufficient permissions to   ✓ **Correct**
write to CloudWatch Logs. Fix this, and it will begin logging on the next
invocation.

💬 **Why is this correct?**
This is a valid reason for a single Lambda function not to log to CloudWatch
Logs. The function runs by assuming a role; if that role has no permissions or
insufficient permissions, logging will fail.

👍 👎

3. You are hosting a web application on web servers in an Auto Scaling
Group. You want to capture metrics and store it without losing any   ⌃
information as a server scales down. What can you do?

A. You only have to create a CloudWatch Logs Group to store the data.

B. Log data from EC2 instances are automatically streamed to CloudWatch.

C. Create a Kinesis Stream and send the data to EMR. From EMR you   ✕ **Your Answer**
can stream the data to an S3 bucket for long term storage.

💬 **Why is this incorrect?**
Incorrect. CloudWatch can handle this scenario without the extra services in this
solution.

D. Bootstrap your instances with the CloudWatch Logs agent. Create a   ✓ **Correct**
CloudWatch Log Group. Stream this information to CloudWatch.

💬 **Why is this correct?**
Correct.

👍 👎

4. **You have a marketing application running on Elastic Beanstalk (written in python). The application posts tweets on Twitter related to your company's marketing strategies. But you need to design a way to record the replies to these tweets. You've written a small application that polls your twitter account for replies to these tweets. Now you just need to record the replies in a durable data store that can be accessed to perform analytics on the historical data at any time. How can you do this?**

A. Deploy the new application in an Auto Scaling group of EC2 instances, read the replies from Twitter, store it in Amazon Glacier, and use AWS Data Pipeline to publish it to RedShift for analytics.

B. Deploy the new application as an Amazon Elastic Beanstalk application, read the data from Twitter, store it in S3, and use Amazon Kinesis to stream the data to Amazon CloudWatch for analytics.   ✕ **Your Answer**

💬 **Why is this incorrect?**
S3 is not an ideal storage solution for analytical data. There are multiple better options.

Video for reference: DyanmoDB Essentials Video for reference: Elastic Beanstalk Scenarios https://aws.amazon.com/blogs/aws/aws-howto-using-amazon-elastic-mapreduce-with-dynamodb/ (https://aws.amazon.com/blogs/aws/aws-howto-using-amazon-elastic-mapreduce-with-dynamodb/)

C. Deploy the new application in an Auto Scaling group of EC2 instances, read the data from the social Twitter, store it Glacier, and use AWS Data Pipeline to publish it to Amazon Kinesis for analytics.

D. Deploy the new application component as an Elastic Beanstalk application, read the data from the social media sites, store it in DynamoDB, and use Apache Hive with Amazon Elastic MapReduce for analytics.   ✓ **Correct**

💬 **Why is this correct?**
Elastic Map Reduce with DynamoDB is a good solution for this use case. Elastic Map Reduce allows for the use of hive to query a data store for historical data using SQL.

Video for reference: DyanmoDB Essentials Video for reference: Elastic Beanstalk Scenarios https://aws.amazon.com/blogs/aws/aws-howto-using-amazon-elastic-mapreduce-with-dynamodb/ (https://aws.amazon.com/blogs/aws/aws-howto-using-amazon-elastic-mapreduce-with-dynamodb/)

👍 👎

5. After an audit you have been given specific requirements for storing your log files. Log files need to be retained for 5 years. But you need to be able to quickly access any logs within the last 6 months. How can you meet these requirements in a simple way?

A. Store your log files in S3 and archive to Glacier after 180 days.	✓ **Correct**
💬 **Why is this correct?** correct	

B. Store your log files in S3, archive to S3-IA after 30 days, then archive to Glacier after 180 days.	

C. Install the CloudWatch Logs agent on your instances and stream the data to CloudWatch. Create a job to backup the data to Glacier after 180 days.	✗ **Your Answer**
💬 **Why is this incorrect?** Incorrect. Using S3 and Glacier with S3 Lifecycle policies is the solution.	

D. Archive your log files using EBS snapshots.	

👍 👎

6. You are placed in charge of managing your company OpsWorks Stacks. You need to design an effective strategy to monitor your OpsWorks Stacks. Which AWS services can you use to monitor your OpsWorks Stacks? Choose 2 answers.

A. SNS	
B. CloudTrail	✓ **Correct**
C. AWS Config	
D. CloudWatch Logs	✓ **Correct**

👍 👎

7. You have EC2 instances in an Auto Scaling Group behind and Elastic Load Balancer. The instances have EBS volumes and you need to back up these instances from the CLI. Which command would you call?

| A. ec2 create-snapshot | ✓ **Correct** |

| B. ec2 create-backup |

| C. You can not backup EBS volumes from the command line. |

| D. ec2 create-volume |

👍 👎

8. **You are receiving complaints from customers that your web application is experiencing poor response times during certain times of the day. After analyzing your metrics, you verify the poor response times and notice that your Auto Scaling Group reaches its maximum during these times and response times are still poor. What can you do to improve response times most cost-effectively?**

| A. Add a Log Group to your EC2 instances allowing metrics to be streamed to CloudWatch faster. |

| B. Increase the maximum size of your Auto Scaling Group | ✓ **Correct** |
| 💬 **Why is this correct?** Correct. The ASG maxing out while response times are poor indicates that the Auto Scaling Group is not large enough. |

| C. Increase the maximum size of your Auto Scaling Group and change to larger instances. |

| D. You can increase the granularity of your CloudWatch metrics to allow the Auto Scaling Group to scale up faster. | ✗ **Your Answer** |
| 💬 **Why is this incorrect?** Incorrect. The scenario indicates that the ASG maxes out and the response times are still bad. This will not completely solve the problem. |

👍 👎

9. **You have decided to set the threshold for errors on your application to a certain number and once that threshold is reached you need to alert the Senior DevOps engineer. What is the best way to do this? Choose 3.**

A. Pipe data from EC2 to the application logs using AWS Data Pipeline and CloudWatch.

B. Once a CloudWatch alarm is triggered, use SNS to notify the Senior DevOps Engineer.	✓ **Correct**
C. Set the threshold your application can tolerate in a CloudWatch Logs group and link a CloudWatch alarm on that threshold.	✓ **Correct**
D. Use CloudWatch Logs agent to send log data from the app to CloudWatch Logs from Amazon EC2 instances.	✓ **Correct**

👍 👎

10. You are the operations engineer for a medium sized application provider. You are currently working on managing the DynamoDB tables for the application. One of your tables is using Global Secondary Indexes which has an error 'ProvisionedThroughputExceededException'. You increase the WCU value on the table from 1000 to 1500, the amount agreed with management but you still receive a 'ProvisionedThroughputExceededException' error. You review the CloudWatch logs and can see the writes to the table and below the WCU allocated ... what could be an issue?

A. Your WCU changes are not being applied - immediately, WCU changes take 45-60 minutes to perform the partition changes. ✕ **Your Answer**

💬 **Why is this incorrect?**
   Incorrect - this is not true, and its not a potential cause of the error.

B. You have a GSI which has insufficient WCU allocated to it - this is the cause of the throttling ✓ **Correct**

💬 **Why is this correct?**
   Correct - GSI's use their own WCU and RCU - every write to the table has a corresponding sparse write to a GSI. If the GSI performance is throttled, so is the tables and can generate this error.

C. You have a LSI which has no WCU allocated to it - this is causing throttling

D. You performance buffer is empty, wait a while or increase the WCU further to resolve the issue.

👍 👎

11. In a recent deployment of your application you created a new AMI. Your application has an Auto Scaling group of four EC2 instances behind an Elastic Load Balancer. Your Auto Scaling group was updated with a new launch configuration that refers to the updated AMI. During the deployment, customers complained that they were receiving several errors even though all instances passed the ELB health checks. You go to check the ELB access logs and they are empty. Why could this be? Choose the best answer.

A. ELB Access logs are only available for 2 weeks.

B. You do not have the appropriate permissions to access the logs.   ✕ **Your Answer**

🗩 **Why is this incorrect?**
Access logging is an optional feature of Elastic Load Balancing that is disabled by default. After you enable access logging for your load balancer, Elastic Load Balancing captures the logs and stores them in the Amazon S3 bucket that you specify. When you set up the logs at any time after that, you can change the interval at which the logs are taken from 5 minutes to 60 minutes.

C. You do not have your CloudWatch metrics correctly configured.

D. Access logging is an optional feature of Elastic Load Balancing that is   ✓ **Correct**
disabled by default

🗩 **Why is this correct?**
Access logging is an optional feature of Elastic Load Balancing that is disabled by default. After you enable access logging for your load balancer, Elastic Load Balancing captures the logs and stores them in the Amazon S3 bucket that you specify. When you set up the logs at any time after that, you can change the interval at which the logs are taken from 5 minutes to 60 minutes.

👍 👎

12. You have noticed some suspicious activity in your environment. After a meeting with your Security Lead, you decide to monitor the activities related to a particular API call. How can you configure this?

A. Use AWS Config to monitor API calls and create an SNS notification when the specific API call is made.

B. Create an alarm in CloudWatch and receive notifications of particular API   ✓ **Correct**
activity as captured by CloudTrail. Create an SNS notification to email security personnel when the alarm occurs.

Why is this correct?

🗨 Correct.

C. Install the CloudWatch Logs Agent on your instances and stream   ✕ **Your Answer**
the logs to CloudWatch. Also create a CloudWatch Log Group and set
up a metric for the API call. These metrics can be viewed in
CloudWatch.

🗨 **Why is this incorrect?**
   Incorrect. CloudTrail needs to be part of the solution to capture the API calls.

D. Use CloudTrail to monitor the API call. Stream the API event to an SQS queue.
Create an Auto Scaling Group to consume the queue and send an email noticiation.

👍 👎

13. You have just been hired on as a DevOps Engineer. Your predecessor
    left abruptly and you are missing a lot of documentation. You are
    reviewing your Load Balancers and notice that logging is enabled.   ⌃
    Where would this log information be stored and how could you find it's
    location?

A. ELB log data is sent to an S3 bucket which you can find the name of in   ✓ **Correct**
the Load Balancer attributes in the Management Console.

B. ELB Log Data needs to be backed up manually with a script. It can be stored in the
storage of your choosing.

C. ELB Log data is sent to a storage device of your choosing. You can find the url to
the device in DynamoDB.

D. ELB Log data is sent to a Kinesis Stream which you can find the name of in the
Load Balancer attributes in the Management Console.

👍 👎

14. Your application uses the Go SDK to communicate with an Amazon
    SQS queue. This application is running in an Auto Scaling group,
    where the scaling policy is based on the number of messages in the
    SQS queue, with a maximum of 6 instances. Since the application has
    been deployed, the group has never needed to scale out above 4
    instances, since the Go application is very efficient. The Auto Scaling
    group has just scaled out to its maximum of 6 instances, however, and   ⌃
    has triggered a notification. After investigating, you notice that the
    queue size is increasing and very few jobs are being completed.
    However, the queue isn't seeing more messages than usual.

What should you do to figure out why the queue size is growing while jobs aren't being completed, and how to reduce it?

A. Create another Launch Configuration and double the size of your Auto Scaling Group.

B. Check CloudTrail logs to make sure that there are no issues with permissions.

C. Pull up application logs and identify why jobs are not being processed. ✓ **Correct** Resolve the issue.

💬 **Why is this correct?**
Correct.

D. Create another identical Auto Scaling group in order to process the ✕ **Your Answer** queue in parallel with the first Auto Scaling group.

💬 **Why is this incorrect?**
Incorrect. Creating another Auto Scaling Group is an unnecessary step which will add expenses. It's best to check the application logs to try to identify the cause of the problem.

👍 👎

15. Once we have our logs in CloudWatch, we can do a number of things such as: Choose 3. ⌃

A. Record API calls for your AWS account and delivers log files ✕ **Your Answer** containing API calls to your Amazon S3 bucket

💬 **Why is this incorrect?**
Once we have our logs in CloudWatch, we can do a number of things, like: retrieve statistics, stream the log data into Amazon Elasticsearch in near real-time with CloudWatch Logs subscriptions, stream the log data to Amazon Kinesis, send the log data to AWS Lambda for custom processing or to load into other systems, and analyze and process the data through custom solutions. AWS CloudTrail is a service that records API calls for your AWS account and delivers log files containing API calls to your Amazon S3 bucket or a CloudWatch Logs log group. With AWS CloudTrail, you can look up API activity history related to creation, deletion and modification of AWS resources and troubleshoot operational or security issues.

B. Send the log data to AWS Lambda for custom processing or to load into ✓ **Correct** other systems.

C. Stream the log data into Amazon Elasticsearch in near real-time with CloudWatch Logs subscriptions.   ✓ **Correct**

D. Stream the log data to kinesis.   ✓ **Correct**

💬 **Why is this correct?**
Once we have our logs in CloudWatch, we can do a number of things, like: retrieve statistics, stream the log data into Amazon Elasticsearch in near real-time with CloudWatch Logs subscriptions, stream the log data to Amazon Kinesis, send the log data to AWS Lambda for custom processing or to load into other systems, and analyze and process the data through custom solutions. AWS CloudTrail is a service that records API calls for your AWS account and delivers log files containing API calls to your Amazon S3 bucket or a CloudWatch Logs log group. With AWS CloudTrail, you can look up API activity history related to creation, deletion and modification of AWS resources and troubleshoot operational or security issues.

👍 👎

16. You have a customer-facing application running on multiple M3 instances in two AZs. These instances are in an Auto Scaling group configured to scale up when load increases. After taking a look at your CloudWatch metrics, you realize that during specific times every single day, the Auto Scaling group has a lot more instances than it normally does. Despite this, one of your largest customers is complaining that the application is very slow to respond during those time periods, every day.   ⌃

The application is reading and writing to a DynamoDB table which has 400 Write Capacity Units and 400 Read Capacity Units. The primary key is the company ID, which is used by your clients to retrieve their data, and the table is storing roughly 20 TB of data. The application is also very read heavy.

Which solution would solve the issue in a scalable and cost-effective manner?

A. Double the number of read and write capacity units, because the DynamoDB table is being throttled when customers from the same company all use the table at the same time.

B. Configure DynamoDB Accelerator (DAX)   ✓ **Correct**

💬 **Why is this correct?**
Correct. DAX is a fully managed caching service that sits (logically) in front of your DynamoDB tables. It operates in write-through mode, and is API-compatible with DynamoDB. Responses are returned from the cache in microseconds, making DAX a great fit for eventually-consistent read-intensive workloads.

C. DynamoDB is not a good solution for this use-case. Instead, create ✕ **Your Answer**
a data pipeline to move data from DynamoDB to Amazon RDS, which
is more suitable for this.

🗨 **Why is this incorrect?**
   Incorrect. There is nothing in the scenario, such as complex queries or stored
   procedures, that would indicate RDS is a better solution.

D. Add a caching layer in front of the web application with ElastiCache Memcached or
Redis.

👍 👎

17. After receiving multiple complaints that your web application is
    crashing, you determine that your code is causing a memory leak. This
    application is built using CloudFormation. The architecture is a group
    of Linux EC2 instances in an Auto Scaling Group with a back-end RDS   ⌃
    MySQL database. Your team is working on a code fix. But what can
    you do to detect such memory related issues and have your personnel
    notified as soon as a problem arises?

A. Configure a CloudFormation Intrinsic Function to capture memory usage statistics
and store this information in an SQS queue. Subscribers to the queue will have on-
demand access to this information.

B. Use native CloudWatch Agent metrics to gather the data you need..   ✓ **Correct**
Create a CloudWatch Alarm that will trigger an SNS notification to your
personnel when memory usage becomes a problem.

🗨 **Why is this correct?**
   Correct.
   https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/metrics-
   collected-by-CloudWatch-agent.html
   (https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/metrics-
   collected-by-CloudWatch-agent.html)

C. Create a CloudWatch Alarm on memory usage and trigger an SNS notification when
usage becomes too high.

D. Install the CloudWatch Logs agent on your EC2 instances during   ✕ **Your Answer**
bootstrapping. Stream this log data to CloudWatch. Configure
CloudWatch to send an SNS notification to your personnel when a
memory usage event occurs.

🗨 **Why is this incorrect?**

Incorrect. The key to this scenario is the creation of a custom metric to capture memory statistics. Without the custom metric you will not be capturing the proper information.

👍 👎

18. You work for a medium sized web hosting business utilizing AWS. You have been asked to look at cost optimizations for the environment and are starting with an isolated pocket of infrastructure for a legacy client. The client's infrastructure consists of multiple environments, 50 in total, each using a N-tier architecture with a dedicated public facing AWS classic load balancer. The infrastructure was deployed into AWS approximately 4 years ago and has remained untouched since. The environments use SSL for secure client -> server connectivity, with the SSL certificates hosted on the load balancers. Which option below offers a good reduction in costs with little risk and no extensive infrastructure changes.

A. The environment is optimised in its current form - further cost savings are not possible.

B. Merge the 50 classic load balancers into a single classic load balancers capable of servicing all environments.

C. Merge the 50 classic load balancers into a smaller number of five application load balancers - each of which is capable of using multiple SSL certificates and SNI. ✓ **Correct**

D. Merge the 50 classic load balancers into a single application load balancer which is capable of hosting multiple environments and multiple SSL certificates.

👍 👎

19. You are doing frequent releases on an application that needs to be highly available. Your team has determined to analyze the application logs after each deployment to insure everything is working properly. Which technique would enable your team to view the application logs in near real-time?

A. Stream the logs to CloudWatch and set up an SNS notification to email personnel when the logs are available.

B. Send the logs to S3 and use EMR to analyze the logs hourly.

C. Stream the logs to Kinesis and have the logs analyzed in real-time.

D. Stream the logs to Redshift and set up data analysis on Redshift.

👍 👎

20. After a major bug brought your web application down, a review determined that it took way too long to pinpoint the problem in log files. Which AWS service can you use to quickly analyze and search on log data? ∧

A. CloudTrail   ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. Elasticsearch is designed to analyze and search on Log data. CloudTrail tracks API calls.

B. AWS Elasticsearch   ✓ **Correct**

💬 **Why is this correct?**
Correct. Elasticsearch is designed to analyze and search on Log data.

C. AWS EMR

D. AWS Redshift

👍 👎

AWS Certified DevOps Pro - Domain 3   ∧

1. You are in charge of security for the company development team. Each member of the team will need to access AWS resources programmatically. Which types of credentials are used for programmatic access to APIs? Choose 2 answers. ∧

A. MFA

B. username/password   ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. This is a sign-in credential and is not used for making programmatic calls.

C. Access Keys ✓ **Correct**

D. MFA for API calls ✓ **Correct**

💬 **Why is this correct?**
Correct. Multi-factor authentication (MFA)-protected API access requires IAM users to enter a valid MFA code before they can use certain functions, which are APIs.

👍 👎

2. **You have a group of EC2 instances in an Auto Scaling Group behind a Load Balancer. You have added an HTTPS Listener to perform encryption and decryption on your Load Balancer. What must you deploy on the Listener?** ⌃

A. One SSL Certificate per instance.

B. An IAM Role for SSL

C. A Security Group. ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. You can use an HTTPS listener to offload the work of encryption and decryption to your load balancer so that your applications can focus on their business logic. If the listener protocol is HTTPS, you must deploy exactly one SSL server certificate on the listener.

D. One SSL Certificate ✓ **Correct**

💬 **Why is this correct?**
Correct. You can use an HTTPS listener to offload the work of encryption and decryption to your load balancer so that your applications can focus on their business logic. If the listener protocol is HTTPS, you must deploy exactly one SSL server certificate on the listener.

👍 👎

3. **You have been tasked to ensure costs are managed within your businesses AWS account. The business have provided two requirements, first that it should be easy to determine the AWS costs for each team or business unit, and practical limits can be placed on those teams and business units. Which options below are valid solutions to this business need.** ⌃

A. Add all team/business unit members into AWS IAM Groups and apply cost limits to those groups. From within the AWS account options, enable 'IAM Group Billing' support to produce daily, weekly & monthly billing reports broken down into those groups.

✕ **Your Answer**

💬 **Why is this incorrect?**
IAM Group billing isn't a real option - limits cannot be placed on IAM groups in this way.

B. Implement organisation & IAM policies to encourage and enforce cost tagging on resources in the AWS account. Use the built in AWS tools to allow bills to be broken down based on these tags.

✓ **Correct**

C. Use the AWS Budgets feature to define budgets based on TAGS. Ensure a TAG exists for each business unit or team.

✓ **Correct**

💬 **Why is this correct?**
This built in method allows budgets and notifications to be created.

D. Use AWS Kinesis and firehose to pipe billing information in EMR for real-time cost visualisation.

👍 👎

4. You have been asked by your CIO to diagnose a permissions issue occurring on your EC2 instances. A group of 3 EC2 instances runs a shell script which periodically parses an S3 bucket, collating metadata on a huge number of objects and entering that information into a DynamoDB table for searching and manipulation by your companies data scientists. The scripts have recently started to fail - they are unable to read the object metadata from S3 and are unable to write the data into DynamoDB.

⌃

You have checked your configuration management system - and can see that a previous operational engineer configured the system to inject authentication information onto the instance. You have also verified that the EC2 instance has a role assigned AND the role has sufficient permissions to perform the tasks.

You are asked to review some suggestions from junior team members and suggest the most likely reason for further investigation.

A. The EC2 instance is configured to assume the permissions of an IAM user with insufficient permissions

B. There is a problem with the access keys injected via the configuration management system.

✓ **Correct**

💬 **Why is this correct?**

Correct - this is a likely problem. The injected authentication details will take preference over any EC2 role assigned to the instance as per https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-getting-started.html#config-settings-and-precedence (https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-getting-started.html#config-settings-and-precedence). Even if the EC2 role permissions the instance assumes allow access - they will only be processed if the injection of AWS Credential file or CLI configuration doesn't occur.

C. There is a problem with the EC2 role - it must be configured incorrectly and is processed with more preference than the injected authentication information

D. The IAM policy is configured for interactive usage only - it will work when tested on your local workstation, but not when used inside a script   ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect - not something that a policy is capable of restricting against.

👍 👎

5. **You need to securely store your RDS database credentials. The credentials need to be accessible by the applications on your EC2 instances with security being the most important requirement. What are two ways you could do this?**   ⌃

A. Attach an IAM Role to your EC2 instances granting read access to an S3 Bucket. Store the credentials in the S3 Bucket and use S3 server-side encryption on the credential files.   ✓ **Correct**

B. Use AWS Secrets Manager   ✓ **Correct**

💬 **Why is this correct?**
This is a good solution to store credentials securely.

C. Store the credentials in your application code.

D. Store the files on your RDS instance. Have a script on each instance pull the credentials from RDS.   ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. Storing on the instance is not recommended.

👍 👎

6. You are delegating work to your dev team and have decided to give them permission to launch an instance with an IAM role. How would you grant this permission to your developers? ︿

A. Create a policy containing iam:UseRole

B. Create a policy containing iam:PassRole   ✓ **Correct**

💬 **Why is this correct?**
Correct. To enable an IAM user to launch an instance with an IAM role or to attach or replace an IAM role for an existing instance, you must grant the user permission to pass the role to the instance. This can be done with iam:PassRole.

C. Give cross-account access to your account.   ✗ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. To enable an IAM user to launch an instance with an IAM role or to attach or replace an IAM role for an existing instance, you must grant the user permission to pass the role to the instance. This can be done with iam:PassRole.

D. They will have this capability if they can create instances.

👍 👎

7. You are going to use IAM roles for your applications. The roles, attached to instances, will allow your applications to make requests on your behalf. What is true of IAM roles and instance? ︿

A. You can attach multiple IAM roles to a single instance, and you can   ✗ **Your Answer**
attach a single IAM role to multiple instances.

💬 **Why is this incorrect?**
Incorrect. You cannot attach multiple IAM roles to a single instance, but you can attach a single IAM role to multiple instances.

B. You cannot attach multiple IAM roles to a single instance, and you cannot attach a single IAM role to multiple instances.

C. You cannot attach multiple IAM roles to a single instance, but you can   ✓ **Correct**
attach a single IAM role to multiple instances.

💬 **Why is this correct?**
Correct.

D. You can attach multiple IAM roles to a single instance, but you cannot attach a single IAM role to multiple instances.

👍 👎

8. After a recent audit you have been tasked with ensuring that account activity is logged and can be tested for validity.

Which of the below options is a valid way to meet this requirement.

A. Ensure AWS CloudTrail is enabled and correctly configured for the ✕ **Your Answer** AWS Account. Store CloudTrail logs in an S3 bucket in a isolated read-only AWS account. Use the "validate-logs" CLI command from a machine with AWS account access whenever validation is required.

💬 **Why is this incorrect?**
The validate logs command will only function if the logs remain in their original location as delivered by AWS.

B. Ensure AWS CloudTrail is enabled and correctly configured for the AWS Account. Store CloudTrail logs in an S3 bucket and use the "validate-logs" CLI command from an 'air gapped or offline' machine whenever validation is required.

C. Configure CloudTrail to store logs on S3 and notify operations staff via AWS SES whenever log changes occur.

D. Ensure AWS CloudTrail is enabled and correctly configured for the AWS ✓ **Correct** Account. Store CloudTrail logs in an S3 bucket and use the "validate-logs" CLI command from a machine with AWS account access whenever validation is required.

💬 **Why is this correct?**
This option is one potential solution - CloudTrail can store API logs to S3 along with a digest which can be used to validate the authenticity of the logs.

👍 👎

9. You have assigned your team member John to perform backups within the organization and he needs access to an S3 Bucket called Backups. After a while, you decide that you want two more team members to have access to perform backups. How can you give this access in a way that makes it easier to manage and maintain?

A. Create an IAM Group for backups and place all team members you want ✓ **Correct** to give this access in the group.

B. Create a role for backups and give each member access to this role.

C. Give the new team members the same access to the bucket as you gave John.

D. Create a cross-account access between John and the two team members.

👍 👎

10. You are working from the CLI with IAM roles. But you also have the AWS Management Console open to view existing IAM roles. You are starting an EC2 instance in the console and check the dropdown for IAM roles. From the dropdown, you copy a name and try to perform a CLI command with the role you got from the dropdown. But after executing the command you get a message indicating that the role does not exist. What could be the problem?

A. You mistyped the role name.

B. You do not have the permissions to work with that role.   ✗ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. Amazon EC2 uses an instance profile as a container for an IAM role. When you create an IAM role using the IAM console, the console creates an instance profile automatically and gives it the same name as the role to which it corresponds. If you use the Amazon EC2 console to launch an instance with an IAM role or to attach an IAM role to an instance, you choose the role based on a list of instance profile names.

C. You can't work with roles from the CLI.

D. The dropdowns contain instance profiles.   ✓ **Correct**

💬 **Why is this correct?**
Correct. Amazon EC2 uses an instance profile as a container for an IAM role. When you create an IAM role using the IAM console, the console creates an instance profile automatically and gives it the same name as the role to which it corresponds. If you use the Amazon EC2 console to launch an instance with an IAM role or to attach an IAM role to an instance, you choose the role based on a list of instance profile names.

👍 👎

11.

You have a mobile application which stores photos for thousands of end users. You will store photos in S3. How can you authorize access to these photos?

A. The users authenticate at the app level, and an STS token can be used to ✓ **Correct** grant access to S3.

💬 **Why is this correct?**
Correct.

B. Use an IAM Role to grant access to the S3 Bucket.

C. Give each user their own S3 Bucket which is configured as a static web site. Have the user authenticate to the bucket.

D. Use Cross-Account Access. ✗ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. These users are not from another AWS account.

👍 👎

12. You have a group of web server EC2 instances in an Auto Scaling Group behind a Load Balancer. The instances are all performing SSL encryption but you would like to take this burden from the instances. How can you do this?

A. Put an HTTPS Listener on the Load Balancer. ✓ **Correct**

💬 **Why is this correct?**
Correct. You can use an HTTPS listener to offload the work of encryption and decryption to your load balancer so that your applications can focus on their business logic.

B. Encrypt your data at the database level.

C. Create a Bastion Host in front of the instances to perform ✗ **Your Answer** encryption and decryption.

💬 **Why is this incorrect?**
Incorrect. You can use an HTTPS listener to offload the work of encryption and decryption to your load balancer so that your applications can focus on their business logic.

D. You can't. The data has to be encrypted by the instances.

👍 👎

13. Your company has a hybrid infrastructure with legacy on-premises systems as well as an AWS account. Many of your team members with accounts in the AD on-premises system need access to AWS resources. How can you give them this access? ⌃

A. IAM Roles for EC2.

B. Cross-Account Access ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. Cross-Account access is for access between AWS accounts.

C. Create separate accounts for your users in AWS.

D. Identity Federation ✓ **Correct**

💬 **Why is this correct?**
Correct. An identity broker that sits between your corporate users and your AWS resources to manage the authentication and authorization process without needing to recreate all your users as IAM users in AWS.

👍 👎

14. Your business was recently audited and the process identified one major problem within your IT platform - logging. The audit team identified a major risks that application logging was all locally performed in silos - no log backups, authenticity checking or protection occurred as a matter of process. You have been tasked to ⌃ identify a number of changes which can be implemented within the environment to ensure these issues can be marked as fixed on the next audit.

Which of the following options are good solutions.

A. All EC2 instances come with CloudWatch logs pre-installed - configure this agent via a EC2 Deploy command to log data to CloudWatch

B. Create an S3 bucket in an alternative region from existing accounts. ✕ **Your Answer**
Configure all AWS products are services to log to this S3 bucket. The region separation will protect the data in the bucket if other regions are exploited.

💬 **Why is this incorrect?**

Incorrect - if account credentials are exploited, unless specifically configured - any rights of those credentials applies to all regions. Additionally not all services can natively log to S3.

C. Utilise a multi-account strategy. Configure CloudWatch to stream logs into a isolated AWS account used only for logging and auditing. Ensure that access rights and logins to this secondary account are not the same as any existing AWS accounts.   ✓ **Correct**

D. Ensure that all EC2 instances running any applications have a CloudWatch logs agent installed.   ✓ **Correct**

🗨 **Why is this correct?**
Ensuring this as standard, will enable CloudWatch to become a central point for all log review - this offers benefits in terms of management, and if the EC2 instances are ever exploited the logs are still available.

E. Enable AWS CloudWatch, AWS CloudTrail and AWS Config - all are disabled by default on all AWS Accounts.

👍 👎

15. **You work in the DevOps team within a hosting business. Your company manages 1000's of customer environments each provisioned and managed using CloudFormation templates. Recently the business has grown significantly and you have formed a service desk team with the responsibility for Adds, Moves and Changes to customer environments. You need to decide on a way to provide the servicedesk team with enough access rights via IAM to perform adjustments to client environments - but not enough to be able to modify / delete or add infrastructure outside these client environments. Which method is the most suitable, in that it can provide the service desk team the required abilities, but do so with as least permissions granted as possible. (select the best answer)** ⌄

A. Apply the Administrator managed policy to the service desk group within IAM.

B. Provide the service desk team with the iam permissions to Update stacks.

C. Grant the servicedesk team iam:CloudFormationOperator permissions in addition to Create, Update and Delete cloud formation permissions.

D. Ensure your DevOps team have the iam:PassRole permission. When   ✓ **Correct**
cloud formation stacks are created use the iam:PassRole permissions.
Provide the service desk team with the iam permissions to Update stacks.

👍 👎

16. You work as a DevOps engineer in a large software company. A set of automated tests run when new code is committed to the repository. The environment consist of a MSSQL Database, an application server, and a S3 bucket. The environment is in a dedicated VPC. Environments are sometimes deployed for other departments. When that happens, it needs to be done in an automated way. You have designed a CloudFormation template which is deployed by an automation server, but you need to ensure the S3 bucket is only accessible from within the its respective VPC.

Which of the following is a valid solution.

A. Create the S3 bucket as a VPC resource rather than a public one

B. Create an IAM policy using Cloud Formation and link the policy to the VPC it creates. Add policy items which allow access to the S3 bucket from the VPC and Deny world read/write

C. Within the CloudFormation template use the "Regionlock" : internal directive to ensure that the S3 bucket can only be used within the internal region (VPC) it's deployed into.

D. Create the S3 bucket as normal and create a VPC endpoint for access to ✓ **Correct** S3. Use CloudFormation to create a bucket policy using the "aws:sourceVpce" attribute to lock access to the S3 bucket to the VPC CloudFormation creates.

👍 👎

17. After doing a code review with your dev team, you have expressed concern about the practice of hard coding AWS credentials in code. What should your team do to address this issue?

A. Encrypt your credentials

B. Create an IAM Role to attach to your instances. Update your application ✓ **Correct** to use secure API requests.

C. Store your credentials in a Configuration Management system.

D. Create an IAM Policy

👍 👎

18. You have created IAM roles and begin attaching them to instances. When can you attach a role to an instance? (Choose 3 answers.) ⌃

A. When an instance is terminated. ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. After you've created an IAM role, you can launch an instance, and associate that role with the instance during launch. You can also attach it to a running or stopped instance.

B. When an instance is stopped. ✓ **Correct**

C. When an instance is running. ✓ **Correct**

💬 **Why is this correct?**
Correct. After you've created an IAM role, you can launch an instance, and associate that role with the instance during launch. You can also attach it to a running or stopped instance.

D. When launching an instance. ✓ **Correct**

👍 👎

19. Your finance manager has set a budget for AWS services for your project of $2500. What is a simple way to know you hit this threshold? ⌃

A. Utilize CloudWatch combined with a Billing Alarm. ✓ **Correct**

💬 **Why is this correct?**
You can monitor your AWS costs by using CloudWatch. With CloudWatch, you can create billing alerts that notify you when your usage of your services exceeds thresholds that you define. You specify these threshold amounts when you create the billing alerts. When your usage exceeds these amounts, AWS sends you an email notification. You can also sign up to receive notifications when AWS prices change.

B. Use AWS CLI tools to get month-to-date total.

C. Use AWS CloudWatch Events with API calls and then an SNS notification. ✕ **Your Answer**

💬 **Why is this incorrect?**

You can monitor your AWS costs by using CloudWatch. With CloudWatch, you can create billing alerts that notify you when your usage of your services exceeds thresholds that you define. You specify these threshold amounts when you create the billing alerts. When your usage exceeds these amounts, AWS sends you an email notification. You can also sign up to receive notifications when AWS prices change.

D. Stream the data into Amazon Elasticsearch in near real-time with CloudWatch Logs subscriptions .

👍 👎

20. **You have a CloudFormation template with various resources, including an EC2 instance which your supervisor provisioned. You are attempting to delete a CloudFormation stack but the stack deletion keeps failing and is stuck in DELETE_FAILED. What could be a possible explanation?**   ⌃

A. You do not have the necessary IAM permissions for the EC2 instance you ✓ **Correct** did not provision. You need to use a parameter called retain in the DeletionPolicy and specify the EC2 instance. The stack will delete all resources except for that EC2 instance.

💬 **Why is this correct?**
   A deletion could fail if you don't have the necessary IAM permissions. If we try to delete a resource we don't have permissions to delete, CloudFormation won't be able to delete that resource. This is a good thing, because otherwise users could gain elevated privileges through CloudFormation. We can use a parameter called RetainResources to delete stacks that are stuck in DELETE_FAILED because of a resource that can't be deleted. The stack will delete all resources except for the ones we specify.

B. Because your supervisor instantiated the EC2 instance with the appropriate permissions, he will need to be the one to delete the stack.

C. You do not have the necessary IAM permissions for the EC2 instance you did not provision. You need to use a parameter called retain in the PurgePolicy and specify all resources expect that EC2 instance. The stack will delete all resources except for that EC2 instance.

D. You need to add a statement allowing permissions to that EC2   ✗ **Your Answer** instance in your template, then you need to use a parameter called retain in the PurgePolicy and specify the EC2 instance. The stack will delete all resources except for that EC2 instance.
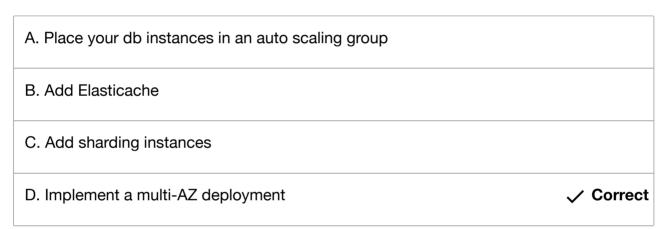
💬 **Why is this incorrect?**

A deletion could fail if you don't have the necessary IAM permissions. If we try to delete a resource we don't have permissions to delete, CloudFormation won't be able to delete that resource. This is a good thing, because otherwise users could gain elevated privileges through CloudFormation. We can use a parameter called RetainResources to delete stacks that are stuck in DELETE_FAILED because of a resource that can't be deleted. The stack will delete all resources except for the ones we specify.

👍 👎

AWS Certified DevOps Pro - Domain 4 ^

1. **Your application runs on EC2 instances behind an Elastic Load Balancer. You are using RDS and read replicas for your read heavy app. What step can you take to make your data tier self-healing?** ^

A. Place your db instances in an auto scaling group

B. Add Elasticache

C. Add sharding instances

D. Implement a multi-AZ deployment ✓ **Correct**

👍 👎

2. **You work for a local government office and are responsible for managing a driver license registration system. Historically the system has a pretty low load, with customers renewing and registering for licenses equally spread over the entire year. In 3 months, the licenses are being replaced with a new document with an embedded RFID chip, requiring everyone to reapply. You expect the load to be at least 10x the usual levels - which normally consist of 90% reads and 10% writes to the database. The application and database currently run on a single Linux server running MySQL, apache and a PHP application. You have been asked to suggest some ideas to allow the system to scale to meet these demands - which options can work together in this scenario to help (pick all that apply).** ^

A. Move the MySQL database to RDS (MySQL) and enable the Multi-AZ feature selecting to place an HA node in each availability zone. Reconfigure the application connection string to round-robin between those nodes using VPC Route53 and a DNS VPC Endpoint for performance reasons. ✗ **Your Answer**

B. Migrate to RDS and Enable Multi-AZ   ✓ **Correct**

🗨 **Why is this correct?**
This migration allows the DB to be scaled separately from the application servers. Additionally, Multi-AZ while not directly adding performance will allow size changes to occur with less production impact.

C. Add read replicas and configure DB connection strings to point at alternative servers   ✓ **Correct**

D. Enable code pipeline to allow the mixed-use of PHP and Go for performance reasons.

E. Migrate from RDS to DynamoDB and utilise a hybrid LSI and GSI strategy to allow SQL to NoSQL migration

F. Develop an automatic build process for the systems software stack. Create a launch configuration, Auto Scaling Group, and a Load balancer.   ✓ **Correct**

👍 👎

3. You manage the operations of a medium size application accepting connections from 1000's of IOT devices. The application uses a number of DynamoDB tables, but one specifically is used by the IOT devices once every 15 minutes to store 'heartbeat' information - consisting of a device_id and a timecode. The table is currently set to 5000WCU to cope with the peak usage of these heartbeat data blobs. The business finance manager has approached you to reduce costs and the heartbeat table is one area you consider. Which options below offer a 'possible' solution to reducing costs (note. each would need to be investigated in detail to confirm, before implementation)

A. Create a DynamoDB table per IOT device, and set a lower performance value on each table. WCU is billed in a tier way, so lower values are much cheaper than higher values.

B. Create an SQS queue and deploy an application update to the IOT devices to write heartbeat information into the SQS queue. Have an SQS consumer to read the data from the queue over time and write to the DynamoDB table over time - creating a more levelled write profile. Reduce the table WCU value more toward this 'level' value.   ✓ **Correct**

C. Create an EC2 instance which is monitoring the consumed capacity ✕ **Your Answer**
on the table every second. A script on the EC2 instance constantly
adjusts the WCU value to more accurately track the consumed
capacity and reduce costs.

💬 **Why is this incorrect?**
   Regular updates to WCU or RCU are a 'very' bad idea - it can cause issues with
   DynamoDB partitioning, ongoing performance issues and even hit account
   limits.

D. Enable the 'on-demand' capacity mode option on the DynamoDB table ✓ **Correct**
to ensure scalable, pay as you go pricing.

💬 **Why is this correct?**
   This is now an option. https://aws.amazon.com/blogs/aws/amazon-dynamodb-
   on-demand-no-capacity-planning-and-pay-per-request-pricing/
   (https://aws.amazon.com/blogs/aws/amazon-dynamodb-on-demand-no-
   capacity-planning-and-pay-per-request-pricing/)

👍 👎

4. **You work for a small web hosting business. One of your clients has
   historically operated using a single EC2 instance, running MySQL,
   Apache, PHP and a installation of wordpress operating over HTTPS.
   The client is about to release a major new product and is expecting
   1000x growth in visitors to the site and has asked that you implement
   modifications to improve the ability of the application to scale in-line
   with best practices while being as economical as possible. Which
   options would you suggest... (pick 4)**

A. Implement a front facing load balancer with the SSL offloading feature ✓ **Correct**
enabled.

💬 **Why is this correct?**
   Correct - this will reduce the per instance processing overhead for handling
   Client -> Server encryption and decryption.

B. Migrate from an on-instance installation of MySQL to Amazon RDS. ✓ **Correct**

💬 **Why is this correct?**
   Correct - This offers the ability to scale the performance delivery of the
   database, and removes this from the EC2 instance which increases
   management overhead (cost) and also impacts scalability.

C. Implement a multicast VPN solution to allow all EC2 instances to ✕ **Your Answer**
share media content from a master node

💬 **Why is this incorrect?**

Incorrect - this is neither possible (VPC's don't support multicast), nor is it preferred as it doesn't allow the system to scale effectively.

D. Use Elasticache and DAX to improve performance of the application ✕ **Your Answer** databases

💬 **Why is this incorrect?**
Incorrect - DAX is DynamoDB Accelerator and is not applicable to MySQL.

E. Modify the deployment to use Launch Configuration, Auto Scaling, CloudFormation and CloudWatch - integrate this with a load balancer. Utilise a small EC2 instance class. ✓ **Correct**

F. Migrate media content from the EC2 instance to S3 and use static web hosting support to deliver this to customers ✓ **Correct**

G. Increase the size of the EC2 instance to the maximum available R class instance.

H. Migrate the media content from the EC2 instance to Amazon Glacier with 'real-time-retrieval' enabled on the glacier instance

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👍 👎

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5. You have a group of EC2 instances in an Auto Scaling Group. You determine that an instance is failing the ELB Health Check but it is not being replaced in the Auto Scaling Group. How can you correct this? ⌃

A. Your ELB is misconfigured. Create a new one.

B. Reduce your Auto Scaling Group size by 1, the bad instance will be removed, then increase the size by 1, and a new instance will be created.

C. Add a new Launch Configuration, scale up a new instance and ✕ **Your Answer** remove the faulty instance.

💬 **Why is this incorrect?**
Incorrect. This is unnecessary work and is not solving the problem which is to use the ELB Health Check.

D. You need to use the ELB Health Check for your Auto Scaling Group. ✓ **Correct**

💬 **Why is this correct?**
Correct. When you use the ELB health check, Auto Scaling determines the health status of your instances by checking the results of both the instance status check and the ELB health check.

👍 👎

6. You are a member of the operations team for a large social media video platform. Your application runs on 1000's of stateless EC2 instances. The application relies on a combination of SQS, a launch configuration, and an autoscaling group. The application performs operations such as watermarking and transcoding of the video to various quality levels and bitrates. All the transcoding servers are stateless and store their logs to local volumes to save on costs. Recently you have noticed that encoding job processing has slowed down and you are experiencing higher failure rates.

   What would you do to fix the problem?

   A. Migrate the EC2 processing pipeline to AWS Lambda - this will provide improved logging and scalability

   B. Enable the 'auto-queue-retry' feature on the dead letter queue

   C. Change the EC2 instance type to X1 - the application issue is clearly a memory leak and the additional capacity of the X1 instance will rectify this.

   D. Use kinesis rather than SQS, it's multi shard architecture will allow parallel processing and improve reliability.

   E. Adjust the launch configuration to bootstrap with the CloudWatch logs   ✓ **Correct**
   agent. Use the centralised logging to determine the actual cause of the
   failures and processing issues. Adjust the products as required once the
   cause is determined.

   F. Adjust the EC2 instance role configured in the Launch Configuration - there must be permissions issues impacting the ability of the instances to process data.

👍 👎

7. You have an Auto Scaling Group of EC2 instances. You have some instances failing Health Checks. You need to troubleshoot but the instances are being terminated before you can complete troubleshooting. What can you do to give you some time to troubleshoot the instances?

   A. Keep an SSH connection open to the instances to allow as much time as possible to troubleshoot.

B. Create a Lifecycle Hook to hold the instance in a terminating:proceed state to give you extra time to troubleshoot.

C. Create a Lifecycle Hook to hold the instance in a pending:wait state to give you extra time to troubleshoot.

D. Create a Lifecycle Hook to hold the instance in a terminating:wait state to give you extra time to troubleshoot. ✓ **Correct**

👍 👎

8. You have configured an Elastic Load Balancer and have an Auto Scaling Group with a max size of 8 and a min size of 4. You currently have 4 instances in the Auto Scaling Group but your Health Checks are failing. After some investigation, you determine that the instances are not receiving traffic from the Load Balancer. You have also determined that the security group associated with the instance allows traffic from the load balancer. You have only custom security groups. What could be the problem?

A. You did not give your Load Balancer an Elastic IP address.

B. You did not configure the Internet Gateway.

C. You Route Table has a black hole.

D. The security group of your load balancer in a VPC does not allow traffic to the EC2 instances. ✓ **Correct**

👍 👎

9. You have received an alarm notification that your RDS DB instance is hovering between 70 and 100 % utilization. You determine that you need to scale your DB tier. Your application is very read heavy. What steps can you take? Choose 2

A. Convert to a DynamoDB back end

B. Add RDS DB instances to shard your data set ✓ **Correct**

💬 **Why is this correct?**
Correct. You can add read replicas, use sharding, or us Elasticache to cache common queries.

C. Create an Auto Scaling Group of RDS instances ✕ **Your Answer**

> 💬 **Why is this incorrect?**
> Incorrect. You can add read replicas, use sharding, or us Elasticache to cache common queries.

D. Add Read Replicas to offload some read traffic ✓ **Correct**

👍 👎

10. You have configured an Elastic Load Balancer and have an Auto Scaling Group with a max size of 8 and a min size of 4. You currently have 4 instances in the Auto Scaling Group but your Health Checks are failing. After some investigation, you determine that the instances are not receiving traffic from the Load Balancer. What could be the problem?

A. The security group associated with the instance does not allow traffic from the load balancer. ✓ **Correct**

B. You have not created a route from the ELB to the instances.

C. You are using TCP for Health Checks instead of HTTP

D. This is not a problem. The ELB sends traffic to the Auto Scaling Group, not to specific instances.

👍 👎

11. The CIO of your business recently attended a workshop and returned with some requirements to add self-healing capability to one of your low usage, but critical applications. The application currently runs on a single EC2 instance in us-east1a. The application utilises PHP for its app layer and PostgreSQL as it's database. What set of actions and AWS products are required to implement self healing and remove single points of failure. Choose one.

A. Run the 'reset-instance-attribute' AWS CLI command and enable the 'az roaming' feature of the EC2 instance. Ensure that all AZ's in the region are selected allowing the instance to migrate freely between AZ's. Enable CloudWatch logging and install the in instance scripts to allow monitoring of Disk Activity, Memory and CPU. At this point the instance will have no single point of failures and will self-heal in the event of an AZ failure.

B. No action is required, EC2 is a region resilient service - the instance can migrate

between hosts and availability zones freely as default. The AWS 'reset-instance-attribute' command can be used to allow region roaming for an additional cost. Ensure EBS snapshots are taken to allow the Database to recover.

C. Migrate the DB from the EC2 instance to RDS using the PostgreSQL engine. Create an AMI of the EC2 instance or develop a set of automated build steps. Create a LC and ASG, add a load balancer and set the ASG to 1/1/1 for min/max/desired values.

D. Migrate the DB from the EC2 instance to DynamoDB using the PostgreSQL engine. Create an AMI of the EC2 instance or develop a set of automated build steps. Create a LC and ASG, add a load balancer and set the ASG to 1/1/1 for min/max/desired values. Ensure Multi-AZ is enabled on DynamoDB

E. Migrate the DB from the EC2 instance to RDS using the PostgreSQL engine. Create an AMI of the EC2 instance or develop a set of automated build steps. Create a LC and ASG, add a load balancer and set the ASG to 1/1/1 for min/max/desired values. Ensure Multi-AZ is enabled on the RDS product.   ✓ **Correct**

👍 👎

12. **You are a DevOps engineer for a major healthcare company and your supervisor has asked you to create a rolling deployment solution that is cost-effective with minimal downtime. How should you achieve this? Choose two:**   ⌃

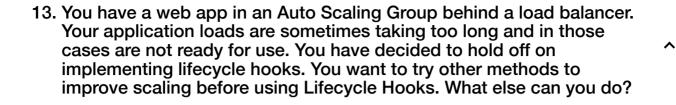A. Use update stack policies with CloudFormation to deploy new code.   ✓ **Correct**

💬 **Why is this correct?**
You can define update policies on Auto Scaling groups in CloudFormation templates. These update policies describe how instances in the Auto Scaling group are replaced or modified as part of a stack update operation. Update policies give you control over the number of instances that can be modified concurrently, the number of instances that should remain in service, and the wait time between instances to be updated. With rolling deployments, you reduce downtime when updating your application.

B. Re-deploy your application using a CloudFormation template to deploy Elastic Beanstalk.

C. After each stack is deployed, tear down the old stack.

D. Re-deploy with a CloudFormation template, define update policies on Auto Scaling groups in your CloudFormation template.   ✓ **Correct**

👍 👎

13. You have a web app in an Auto Scaling Group behind a load balancer. Your application loads are sometimes taking too long and in those cases are not ready for use. You have decided to hold off on implementing lifecycle hooks. You want to try other methods to improve scaling before using Lifecycle Hooks. What else can you do?

A. Take steps to streamline your application load time.

B. Pre-Bake an AMI with the application already configured. Create a new ✓ **Correct**
Launch Configuration and attach it to the Auto Scaling Group.

💬 **Why is this correct?**
Correct. Using the pre-baked AMI will greatly improve load times.

C. Pre-warm your load balancer.

D. Use CloudFormation Templates to build your environment and add ✕ **Your Answer**
Wait states to allow your app to load properly.

💬 **Why is this incorrect?**
Incorrect. This would be a pretty big task, and you could certainly use Lifecycle hooks, which you wanted to avoid for now, before trying a move to CloudFormation.

👍 👎

14. You have configured a Classic Elastic Load Balancer. You set the Health Check to be HTTP on Port 80. You launch an instance but the instance fails the health check. What is a likely cause?

A. You need to configure a target page (index.html) on the instance. ✓ **Correct**

💬 **Why is this correct?**
Correct. When using HTTP for the Health Check, you need to create a target page for the ping path.

B. You also need to add a Health Check for HTTPS on Port 443.

C. You can use Port 80 for the Health Check but it needs to be TCP.

D. You need to add a Lifecycle Hook to insure that the instance ✕ **Your Answer**
bootstrapping has completed.

> 💬 **Why is this incorrect?**
> Incorrect. No information in the scenario was given pertaining to bootstrapping or how long bootstrapping is taking.

👍 👎

15. You need to deploy a new version of your application. You'd prefer to use all new instances if possible, but you cannot have any downtime. You also don't want to swap any environment URLs. You're running t2.large instances and you normally need 8 instances to meet capacity. If the update fails, you want to be able to rollback process requiring only terminating your Auto Scaling group. ⌃

    Which deployment method should you use?

A. Blue/Green

B. Immutable ✓ **Correct**

> 💬 **Why is this correct?**
> During an immutable environment update, the capacity of your environment doubles for a short time when the instances in the new Auto Scaling group start serving requests and before the original Auto Scaling group's instances are terminated. If your environment has many instances, or instances with a low on-demand limit, ensure that you have enough capacity to perform an immutable environment update. If you are near the limit, consider using rolling updates instead. In Blue/Green there is a swap of environment URLs.

C. All at Once

D. Rolling Updates ✕ **Your Answer**

> 💬 **Why is this incorrect?**
> During an immutable environment update, the capacity of your environment doubles for a short time when the instances in the new Auto Scaling group start serving requests and before the original Auto Scaling group's instances are terminated. If your environment has many instances, or instances with a low on-demand limit, ensure that you have enough capacity to perform an immutable environment update. If you are near the limit, consider using rolling updates instead. In Blue/Green there is a swap of environment URLs.

👍 👎

16. You need to resize an instance in your Auto Scaling group, so you stop the instance , make the size change, and then try and restart it. You notice that the instance has now been terminated and replaced. What ⌃

happened?

A. Auto Scaling marked the instance as unhealthy and then terminated it to ✓ **Correct**
replace it with a healthy instance.

B. You need to create a new Auto Scaling group when you resize instances.

C. You did not make the corresponding changes in your CloudFormation template.

D. The instance size you selected was too large.

👍 👎

17. You are looking into a performance issue with a DynamoDB table that
    fluctuates between massive load during peak periods and almost no
    load during off-peak times of the day. You have reviewed CloudWatch
    logs and analyzed application performance and noticed you are
    receiving substantially less read performance than your RCU value
    should provide. Which options below are the most likely reasons for
    the lower than expected read performance?

A. Auto Scaling is disabled.

B. The data's partition key is badly designed, and the table is suffering from ✓ **Correct**
a "hot key" performance constraint.

C. An IAM policy is applying a table performance quota or throttle.

D. The data in the DynamoDB table is spread over too many partitions, ✓ **Correct**
either because the RCU value has been set exceptionally high in the past
and then returned to lower levels, or the amount of data volume has forced
partition expansion.

👍 👎

18. A startup has developed a new restaurant-rating application for mobile
    devices. The application has recently increased in popularity; which
    has resulted in a decrease in performance of the application due to the
    increased load. As Chief Architect of that startup, you've noticed that
    users are spending less time on the application which is driving down
    revenue, and you're in charge of solving this issue.

    The application has a two-tier architecture with a PHP application tier
    running in an Auto Scaling group, and a MySQL RDS instance
    deployed with AWS CloudFormation. The Auto Scaling group has a

min value of 4 and a max value of 8 instances. The desired capacity is now at 8 because of high CPU utilization of the instances.

Instead of increasing the max capacity of the Auto Scaling group, you realize that switching to a different instance type with more CPU resources would solve the performance problem at a cheaper cost.

How can you change instance types while minimizing downtime for end users?

A. Copy the old launch configuration, and create a new launch configuration with the C3 instances. Update the Auto Scaling group with the new launch configuration. Auto Scaling will then update the instance type of all running instances.

B. Update the launch configuration in the AWS CloudFormation template with the new C3 instance type. Add an UpdatePolicy attribute to the Auto Scaling group that specifies an AutoScalingRollingUpdate. Run a stack update with the updated template. ✓ **Correct**

C. Update the existing launch configuration with the new C3 instance type. Add an UpdatePolicy attribute to your Auto Scaling group that specifies an AutoScaling RollingUpdate in order to avoid downtime.

D. Update the AWS CloudFormation template that contains the launch configuration with the new C3 instance type. Run a stack update with the updated template, and Auto Scaling will then update the instances one at a time with the new instance type.

👍 👎

19. You have 5 instances currently running – this is your desired capacity. Your web application is averaging 150 requests per second. But you are expecting seasonal retail spikes to your web application and your number of requests will first exceed 250 then top out above 300. You've created a step scaling policy with these step adjustments: 1. If the number of requests exceeds 250, adjust (increase) capacity by 20%. 2. If, while adjusting or after adjusting, our metric value continues to go up (passing 250) and then goes up past 300, adjust (increase) by another 50%. How many instances total do you have?

A. 5

B. 9 ✓ **Correct**

C. 3

D. 2

👍 👎

20. You have configured an Auto Scaling Group of EC2 instances behind an Elastic Load Balancer. Health check requests from your load balancer to your EC2 instances are timing out. What can you do? ˄

A. Install a CloudWatch Log Agent on the instances. Begin monitoring the application logs. ✕ **Your Answer**

💬 **Why is this incorrect?**
Incorrect. This would not be the first step: Adjust the response timeout settings in your load balancer health check configuration.

B. Contact Amazon Web Services. Intermittent failures indicate a problem on their end.

C. Your Auto Scaling Group must be under heavy load. Increase the size of your Auto Scaling Group.

D. Adjust the response timeout settings in your load balancer health check ✓ **Correct** configuration.

💬 **Why is this correct?**
Correct. The target page may not responding before the health check timeout period. You can rule that out with a timeout adjustment.
https://docs.amazonaws.cn/en_us/elasticloadbalancing/latest/application/load-balancer-troubleshooting.html
(https://docs.amazonaws.cn/en_us/elasticloadbalancing/latest/application/load-balancer-troubleshooting.html)

👍 👎